

INDEX

- A
- A alpha fibers, 822, 823t
- Abbe-Estlander flap, 366, 664, 665
- Abbe flap, 664f
- Abdomen
- children, 528
 - examination of
 - in trauma patient, 352–353
 - fat graft harvest, 501, 501f
- A beta fibers, 822, 823t
- ABG, 28
- Ablative skin resurfacing
- classification of, 1420t
- Abnormal flexor activity, 346
- Abnormal posturing, 346
- Abrasions, 360, 396–397. *See also* Dermabrasion; Microdermabrasion
- corneal, 470f, 1402
- Abscess
- pharyngeal space, 282f
 - pterygomandibular space, 282f
 - subperiosteal, 304
- Abutment fracture, 270
- Abutment transfer impression
- closed-tray technique, 258f
- Accelerated fractionation, 636
- Access flap, 205–206
- Accessory muscles
- ribs, 103
- Accessory ostia, 298
- ACE distraction dental implant system, 184
- ACE inhibitors. *See* Angiotensin-converting enzyme (ACE) inhibitors
- Acellular dermal matrix (AlloDerm), 220–221, 221f
- Acetaminophen
- for fever, 287
- Acetazolamide
- for OSA, 1302
- Acetylcholinesterase
- reversal doses of, 99t
- Acetylsalicylic acid
- inhibiting platelet function, 78
- Acid-base analysis, 53–54
- Acid-base disturbances, 53–54
- Acid-etch splints, 396f, 397t
- Acquired anomalies, 1205
- Acquired immunodeficiency disease (AIDS).
- See also* Human immunodeficiency virus (HIV)
 - immunocompromised, 283
- Acral-lentiginous melanoma, 684, 703
- Acromegaly, 76
- Acrylic resin, 505
- Acrylic splint therapy
- mandibular fractures
 - children, 425
- ACTH, 34
- Actinic cheilitis, 662f, 663f
- lower lip, 618f
- Actinic keratosis, 698, 699f
- Active jaw exercise
- for TMJ, 955
- Acupressure
- for TMJ, 957
- Acupuncture
- for TMJ, 957
- Acyclovir, 687
- Adalimumab
- for rheumatoid arthritis, 36
- Addison's disease, 61, 682
- A delta fibers, 822–823, 823t
- Adenocarcinoma
- metastasizing to condyle, 945
 - polymorphous
 - low-grade, 672
 - recurrent low-grade, 674f
- Adenoids
- children, 103
 - cystic carcinoma, 672
 - hypertrophy, 298
- Adenoma. *See* Pleomorphic adenoma
- Adenomatoid odontogenic tumors, 593f, 594f
- ADHD
- anesthesia with, 119
- Adjuvant chemotherapy, 639
- Adnexal tumors, 697
- Adolescents
- dentoalveolar injuries, 383–384
 - midface advancement surgery
 - timing of, 1269–1270 - pregnancy testing, 107
 - psychological assessment, 105
- Adrenal crisis, 61
- Adrenal glands
- assessment of, 61, 74
 - disorders of, 34
- Adrenal insufficiency, 34
- Adrenocorticotrophic hormone (ACTH), 34
- Adult respiratory distress syndrome (ARDS), 348, 354
- Advanced Trauma Life Support (ATLS), 330
- Advancement flaps, 712–713, 772, 772f
- buccal, 772f
 - double, 771f
- Advancement genioplasty
- soft tissue changes associated with, 1232t
- AEV-12 hand engine, 1430
- Affective disorders, 38–39
- African Americans
- hypertension, 49
 - oral cancer, 617
- AFS, 301, 304f
- Afterload, 22, 26, 49
- Age
- determining preoperative risk, 18
 - wound healing, 12
- Aggressive mesenchymal tumors
- children, 602
- Agonist drugs, 84
- AIC, 52–53
- AIDS. *See also* Human immunodeficiency virus (HIV)
- immunocompromised, 283
- Air bags, 529
- Air leak test, 290, 291f
- Airways, 404
- assessment of, 28, 73–74
 - in asthma, 29
 - BSSO, 1161
 - children, 103, 528
 - craniofacial dysostosis syndrome, 902–903
 - gunshot wounds, 515–516
 - management of difficult, 75f
 - obstruction of
 - in odontogenic infection, 281 - oral cancer, 635
 - panfacial fractures, 552
 - security of, 284
 - trauma patient, 330
- Alabaster skin, 1428

- Alanine aminotransferase (ALAT), 35, 77
- Alar base
- alterations in, 1256
 - cinch suture, 1237f
 - reduction, 1363f
- Alar cinch, 1236, 1441f
- with V-Y closure, 1236–1237
- Alar width
- rhinoplasty, 1353
- ALAT, 35, 77
- Albright's syndrome, 597, 682
- Albumin, 34
- Albuterol
- for asthma, 29
- Alcohol abuse, 39, 281, 1298
- anesthesia with, 121
 - immunocompromised, 283
 - squamous cell carcinoma, 617
- Alcohol withdrawal
- oral cancer, 635
- Alfentanil
- chemical structure of, 88f
 - end-stage TMJ disease, 1017
 - pharmacology of, 89
- Alignment, 795f
- Allen's test
- abnormal, 808f
- Allergic fungal sinusitis (AFS), 301, 304f
- Allergic rhinitis, 106–107, 299
- Allevyn spray, 718
- AlloDerm, 220–221, 221f
- Allogenic bone implants, 166
- Allografts, 786t, 787
- Alloplastic chin implants
- soft tissue changes associated with, 1232t
- Alloplastic esthetic facial augmentation, 1435–1447
- Alloplastic graft, 787
- Alloplastic materials, 1008
- Alopecia, 1403
- Alpha-blockers
- for hypertension, 32
- Alpha-glucosidase inhibitors
- mechanism of action, 60t
- Alpha-hydroxy acid, 1422
- Alpha-interferon
- for central giant cell granuloma, 604
- Aluminum oxide, 1008
- cemented abutment
 - with all-ceramic crown, 257f
- Alveolar and dental fractures
- etiology of, 383–384
 - hard tissue and pulp, 387–397
 - historic perspectives of, 383
 - incidence of, 383–384
 - management of, 383–399
 - maxillofacial examination, 384–386
 - patient history, 384
 - physical examination, 384
 - radiographic examination, 386–387
- Alveolar artery, 1248
- Alveolar bone
- in edentulous patient
 - characteristics of, 157–158 - injuries
 - diagram of, 390f - loss, 263f
 - preservation of, 167–171
- Alveolar cleft
- grafting, 859–869
 - allogeneic bone and bone substitutes, 863–864
 - bilateral, 865f
 - calvarial bone, 863
 - central incisor, 861
 - dental vs. chronologic age, 861
 - lateral incisor, 861
 - late secondary, 862
 - maxillary central incisor, 865f
 - multidisciplinary team, 862
 - outcomes, 859
 - pre-vs. postsurgical orthodontics, 864–865
 - primary, 860
 - rationale for, 859
 - secondary, 860–862
 - social issues, 861
 - source of bone graft, 862–864, 863t
 - sulcular incision, 866f
 - surgical technique, 865–866
 - timing, 859–862, 860t, 861t
 - unilateral, 862f, 864f - reconstruction
 - occlusal radiograph, 868f, 869f - reconstruction of, 859–869
- Alveolar distraction devices, 1293f
- Alveolar distraction osteogenesis, 183–185, 230–231
- dental implants, 1290–1293
- Alveolar distractors, 1291f
- Alveolar mucosa
- treatment, 396–397
- Alveolar osteitis, 149, 151
- Alveolar process
- anterior, 1182
- fractures
- treatment, 395–396
- growth of, 1063
- Alveolar ridge
- cancer, 621
 - survival, 645
 - reconstructive surgery of, 180–181
 - squamous cell carcinoma, 621f
- Alveoloplasty, 168–169
- Alveolus
- squamous cell carcinoma, 644–645
- Ameloblastic carcinoma, 588–589
- Ameloblastic fibroma, 590f
- Ameloblastic fibro-odontoma, 590, 590f
- Ameloblastoma, 583–588
- benign, 588f, 589f
 - malignant metastasizing, 588
 - mural unicystic, 586
 - peripheral, 587–588
 - solid or multicystic, 583–585, 584f, 585f
 - unicystic, 585–586, 586f, 587f
- American College of Cardiology
- cardiovascular risk factors, 19–20, 20t
 - perioperative evaluation for noncardiac surgery, 47
- American M-16, 512
- American Society of Anesthesiologists (ASA)
- Classification of Physical Status, 66, 66t
- Amide
- avoiding in malignant hyperthermia, 38
- Amifostine, 638
- Aminocaproic acid, 473
- Aminosteroids
- pharmacology of, 98
 - properties, 99t
- Amitriptyline
- end-stage TMJ disease, 1022, 1023
- Amoxicillin
- for bites, 362
 - for infectious endocarditis prophylaxis, 24t
 - for odontogenic infection, 289
 - for rhinosinusitis, 305, 502
 - for sinus infection, 305
- Amphetamine abuse
- anesthesia with, 121
- Amphotericin B
- for fungal sinusitis, 307
- Ampicillin, 944
- for COPD, 30
 - for infectious endocarditis prophylaxis, 24t
- Amyloidosis, 38
- Anakinra
- for rheumatoid arthritis, 36
- Ancient Egypt, 189
- Andreasen classification, 387
- Anemia, 30–31
- Anemia of chronic disease, 38
- Anesthesia
- general
 - risk after myocardial infarction, 20

- inhalation
 - pharmacology of, 93–97
 - properties of, 94t
- local
 - TMJ, 953
- outpatient
 - distribution of, 84–85
 - pharmacodynamics of, 83–85
 - pharmacokinetics of, 84–85
 - pharmacology of, 83–100
- regional
 - end-stage TMJ disease, 1017
- Aneurysmal bone cyst, 605, 606f
- Aneurysms
 - maxillary fractures, 442
- Angina, 19, 48–49, 66–67
 - Ludwig's, 284
- Angiogenesis, 5, 8
- Angiography
 - for neck injuries, 518
- Angiotensin-converting enzyme (ACE)
 - inhibitors
 - for aortic regurgitation, 25
 - for congestive heart failure, 22, 26
 - for hypertension, 32
- Angiotensin receptor blockers (ARB)
 - for hypertension, 32
- Angle fractures, 409
 - Champy method, 373f
 - load-sharing fixation, 375
 - widening mandible, 381f
- Angle regions
 - bimanual pressure over, 406f
- Animal bites, 362
- Ankylosed maxillary cuspid
 - partially submerged, 1116f
- Ankylosed permanent tooth, 1131–1132
- Ankylosed primary tooth, 1131
- Ankylosed teeth, 1115, 1131
 - orthodontics, 1132
- Ankylosing spondylitis, 37, 1036, 1037
- Ankylosis, 390–391, 460, 1289
 - after prosthesis placement, 1038
 - bilateral bony, 1039f–1040f
 - computed tomography, 428f
 - of condyle, 1040
 - extra articular, 1035
 - and mandibular fractures, 428–429
 - of TMJ, 1035f, 1041f–1043f
 - and traumatically induced effusions, 412
 - of zygomatic arch coronoid, 460
- Anodontia, 238f
- Anomalies. *See also* Congenital anomalies; Developmental anomalies
 - acquired, 1205
 - Kleeblattschädel, 925–926, 926f
- Anorexia nervosa, 39
- Anosmia, 503
- Antagonist drugs, 84
- Anterior capsular release, 975
- Anterior dislocation, 410–411
- Anterior ethmoidal artery, 465
- Anterior ethmoidal nerve, 1349
- Anterior mandible
 - FPD, 262
- Anterior maxillary congenital deformities, 1287f
- Anterior maxillary defect
 - interpositional grafting, 230f
- Anterior maxillary osteotomy, 1193–1196
- Anterior maxillary segmental osteotomies, 1123, 1123f
- Anterior nasal spine, 436
 - reduction
 - maxillary osteotomy, 1241f
 - poor esthetic outcome, 1241f
- Anterior open bite, 1262–1263, 1291f
- Anterior segmental setback osteotomy
 - soft tissue changes associated with, 1226t
- Anteroposterior arch asymmetry, 1129
- Anteroposterior orthopedic treatment, 1073–1076, 1076–1077
- Anticholinergic medications
 - effects of, 100t
 - with ketamine, 111
 - pharmacology of, 99–100
 - reversal doses of, 99t
- Anticholinesterase
 - pharmacology of, 98–99
- Anticytokines
 - for rheumatoid arthritis, 36
- Antidepressants, 953t
 - for TMJ, 952–953
- Antiemetic medications, 100–101
- Antihistamines
 - adverse effects of, 307
 - children, 115
 - for TMJ, 952
- Antileukotriene drugs
 - for asthma, 29
- Antineoplastic drugs
 - and wound healing, 11
- Antioxidants, 1421
- Antiphospholipid antibodies, 37
- Anxiolytics
 - for TMJ, 952
- AO/ASIF
 - compression plates, 402
 - fracture management biomechanical principles, 373
- Aortic regurgitation, 24–25, 68
- Aortic stenosis, 25, 68
- Apert syndrome, 527, 915, 917f–922f, 922f–923f
 - cranial vault expansion, 915
 - lower facial esthetic reconstruction, 915
 - primary cranio-orbital decompression, 915
 - total midface deformity, 915
- Aphthous stomatitis, 692f
- Aphthous ulcers, 691–692
- Apical repositioned flap
 - canine teeth labially impacted, 135f
- Apnea, 58
- Apoptosis
 - vs. proliferation, 576f
- Approximation, 832
- Arachidonic acid, 1019f
- ARB
 - for hypertension, 32
- Arch, 1386f
 - creating space in, 1121–1122
 - length, 1111–1132, 1112f
 - load, 403f
 - width, 1113
- Arch bars, 372f, 415, 439f
 - isolated mandibular body fracture, 377f
- Archigenes, 383
- Arcus marginalis, 466
- ARDS, 348, 354
- Aripiprazole
 - for psychotic disorders, 39
- Arnold's nerve, 1451
- Arrhythmias, 51–52
- Arterial blood gases (ABG), 28
- Arterial oxygen tension, 332
- Arthrocentesis
 - TMJ, 963–987
- Arthroplasty
 - condyle, 1003f
- Arthroscope
 - TMJ, 969
- Arthroscopic knives, 1000f, 1006f
- Arthroscopic osteoplasty, 978f
- Arthroscopy
 - TMJ, 963–987
 - contraindications for, 967–968
 - development of, 964–965
 - history, 965–966
 - imaging, 966
 - indications for, 966–967
 - instruments, 968–971, 985–986
 - patient selection, 965–966
 - physical examination, 965–966
- Articular apparatus
 - nonfracture injuries of, 410–411, 410t

- Articular cartilage, 934, 935f
 Articular disk
 TMJ, 935–936
 Articular eminence
 endastral view, 973f
 Articular tubercle
 disk impingement, 972f
 ASA Classification of Physical Status, 66, 66t
 Ascending ramus fracture, 409
 Aseptic necrosis, 1250, 1250f
 Asian lid crease reformation, 1334f
 Asian upper eyelid, 1320
 blepharoplasty, 1334
 Aspart
 onset, peak and duration, 61t
 Aspartate aminotransferase (AST), 77
Aspergillus flavus, 301
Aspergillus fumigatus, 300–301
Aspergillus sinusitis, 304f
 Aspiration, 106
 Aspirin
 for cerebrovascular disease, 37
 determining preoperative risk, 18
 for fever, 287
 Aspirin-sensitivity triad, 299
 AST, 77
 Asthma, 28–29, 299
 bronchial, 72–73
 pulmonary assessment, 54–55
 questions about, 29t
 Asymmetric hybrid functional appliance, 1073f
 Asymmetric skull
 CT, 1209f
 Asymmetry. *See also* Facial asymmetry
 anteroposterior arch, 1129
 zygomatic arch fractures, 457
 Asymptomatic patients
 screening tests for, 79
 Atenolol
 avoidance in liver disease, 35
 ATLS, 330
 Atracurium
 properties, 99t
 Atrial dysrhythmias, 27
 Atrial fibrillation, 24, 27, 51
 Atrial flutter, 27
 Atrioventricular blocks, 27–28
 Atrophic mandible, 185f
 augmentation, 195–197
 gingival graft, 211
 iliac crest corticocancellous block graft augmentation, 196f
 implants without grafting, 197
 plane radiograph, 196f
 wishboning, 380, 380f
 Atrophic maxilla
 gingival graft, 211
 Atropine, 99, 106, 473
 with ketamine, 111
 Attention deficit hyperactivity disorder (ADHD)
 anesthesia with, 119
 Auditory canal
 external
 sectioned, 995f
 Auricle. *See* Ear
 Auriculotemporal nerve, 1390
 Auriculotemporal syndrome, 1263
 Austin-Flint murmur, 25
 Autism
 anesthesia with, 119–120
 Autogenous bone grafts
 sites for, 787–792
 Autogenous conchal cartilage, 1008
 Autogenous fascia interpositional grafts, 1007
 Autogenous grafts, 168
 Autoimmune disease, 690–691
 implants, 252
 Autologous fat injection, 1413–1414, 1414f
 Autologous fat transfer, 1412–1415
 complications, 1414–1415
 Automatic implantable cardioverter
 defibrillators (AIC), 52–53
 Avulsions, 361–362, 393–394
 ear, 368f
 lip, 369f
 maxillary fractures, 441
 splints, 395, 396t
 temporary storage of, 393
 treatment, 393–394, 395t
 Axial frontonasal flaps, 772, 773f
 Axial pattern flaps, 716–717
 Azathioprine
 for rheumatoid arthritis, 36
 Azithromycin
 for infectious endocarditis prophylaxis, 24t
 for rhinosinusitis, 502
- B**
 Babinski sign, 346
Bacteroides (Porphyromonas), 140, 426
 Baker-Gordon phenol peel, 1427–1428
 complications from, 1428f
 formula of, 1428t
 freezing from, 1429f
 Ballistics, 510
 Balloon catheters
 nasal packing, 517f
 Bands of Büngner, 824
- Bar attachment, 264, 265f
 overdenture, 264f
 Barbiturates
 pharmacology of, 89–91
 Barbituric acid
 chemical structure of, 90f
 Bar-clip attachments, 265
 Bardach two-flap palatoplasty, 852
 Barium swallow
 vs. esophagoscopy
 for neck gunshot injuries, 518
 Barlow's syndrome, 69
 Barosinusitis, 299
 Bar-retained denture, 264f
 Barton dressing, 287f
 Basal cell cancer
 nasal, 707f
 Basal cell carcinoma, 700, 706f, 712f
 indiscreet temple, 716f
 of left temple, 714f
 Mohs' micrographic surgery removal, 717f
 NMCS, 697
 nodulo-ulcerative, 701f
 resection, 719f
 superficial, 718f
 Basal cell nevus syndrome, 698
 clinical features of, 570t
 Basaloid squamous cell carcinoma, 632
 Base alar reduction
 nasal, 1363
 Basic fibroblast growth factor (bFGF), 193
 Basic multicellular unit (BMU), 7
 Basilar skull fractures, 471
 Battle's sign, 346, 429, 471
 Beaking, 974, 977f
 Beck's triad, 338
 Behçet's syndrome, 692
 Bekhterev's disease, 1036
 Belfast Study Group, 139, 140
 Bell hand engine, 1430
 Bell's phenomenon, 1330
 Benign fibro-osseous disease, 597–600
 cemento-osseous dysplasia, 598–599
 fibrous dysplasia, 597–598
 Benign mucosa membrane pemphigoid (BMMP), 690–691
 Benign ventricular ectopy, 52
 Benzamides
 children, 117
 Benzodiazepines, 952t, 953t
 for delirium tremens, 39, 635
 for depression, 39
 in elderly, 41
 with ketamine, 111
 pharmacology of, 85–87

- for TMJ, 952
- Benzylisoquinolines
 - pharmacology of, 98
 - properties, 99t
- Bernard flap, 666, 666f
- Beta-agonists
 - for asthma, 29
- Beta-antagonist
 - for hyperthyroidism, 34
- Beta blockers, 20, 23
 - for atrial fibrillation, 24
 - for hypertension, 32
- Beta carotene, 641
- Beta-lactam
 - for odontogenic infection, 289
- Beta-sympathetic antagonists
 - reduction in liver disease, 35
- bFGF, 193
- Bicoronal flap, 551
- Bicortical screws, 1259f
- Bicuspid
 - mandible
 - impacted, 136
 - progressive soft tissue recession, 212f
- Biguanides
 - mechanism of action, 60t
- Bilateral alar base wedge, 1243f
- Bilateral body osteotomy, 1125f
- Bilateral sagittal split osteotomy (BSSO), 1137
 - bleeding, 1160
 - complications of, 1155–1156
 - indications for, 1150
 - of mandible, 1214
 - for mandibular horizontal deficiency, 1153f–1154f
 - modification, 1155
 - technique, 1150–1155
 - illustrated, 1152f
 - of vertical ramus, 1150–1161, 1277
- Bilevel positive airway pressure (Bi-PAP)
 - OSA, 1304
- Bilobed flap of Zitelli
 - nasal, 714
- Bilobed flaps, 771f, 773–774
- Bimanual examination, 496, 496f
- Biofeedback
 - for TMJ, 957
- Biologic creep, 712
- Biopsy forceps
 - TMJ arthroscopy, 970
- Bi-PAP
 - OSA, 1304
- Bipolar (manic-depressive) disorders, 39
- Bite appliances, 1009
- Bite depth, 1106
- Black necrotic eschars, 301
- Blade implants, 190f
- Blair, Vilray, 840
- Blair's horizontal osteotomy of vertical ramus, 1135, 1136f
- Blanch test, 338
- Bleeding
 - BSSO, 1160
 - control of, 339–340
 - flaps, 720
 - gunshot wounds, 516–517
 - with impacted teeth removal, 150
 - internal sites of, 341
 - Le Fort level fractures, 438
 - lower eyelid blepharoplasty, 1341
 - mandible, 1249
 - maxilla, 1247–1249
 - maxillary fractures, 442
 - TMJ
 - internal derangement, 1010
 - upper eyelid blepharoplasty, 1340
- Bleeding disorders
 - assessment of, 78
- Bleomycin, 682
- Blepharoplasty, 1317–1342
 - adjunctive procedures, 1341–1342
 - anatomy, 1317–1326
 - anesthesia, 1331
 - chief concern, 1326–1327
 - complications, 1339–1341
 - lower eyelids, 1334–1337
 - patient evaluation, 1326–1331
 - photographic documentation, 1331
 - physical examination, 1328–1330
 - postoperative management of, 1337–1339
 - upper eyelids, 1331–1334
- Blind finger dissection, 1397f
- Blindness, 464
 - maxillary fractures, 442
- Blood clot, 4, 4f, 8
- Blood pressure
 - children, 105, 528
 - in trauma patient, 337
- Blow-in fractures, 467, 472
 - children, 536–537
- Blown pupil, 347
- Blow-out fractures, 457f, 477, 485
 - bilateral, 536f
 - children, 536–537
 - of left orbital floor, 538f
 - orbital, 484
- Blue bloater, 73
- BMMP, 690–691
- BMP, 13, 785, 787
- BMU, 7
- Boat tail bullet, 514
- Body fracture, 409
- Body temperature
 - restoration and maintenance of, 343
- Bolton's analysis, 1112–1113, 1113f
- Bonded orthodontic bracket, 134
- Bone
 - allogenic implants, 166
 - biology of, 785–786
 - healing
 - osseointegration, 192–193
 - secondary, 373f, 374f
 - indirect healing, 6, 373f, 374f
 - loss
 - secondary, 159
 - maturation stages of, 167f
 - regeneration of, 6
 - principles of, 162–164
 - remodeling, 7
 - tension-stress, 164
 - volume
 - implant prosthodontics, 252
 - inadequate posterior, 236f
 - wound healing, 6–7
- Bone grafts, 165–167, 786t
 - autogenous
 - sites for, 787–792
 - benefits of, 1268–1269
 - biology of, 786–787
 - cleft maxilla/palate, 1269f
 - timing and sequencing, 1268–1269
 - cranial, 788, 788f, 789f, 790f
 - cranial onlay
 - maxilla, 263f
 - guided
 - augmentation, 223
 - harvesting, 196
 - iliac crest, 268f, 789–791, 862–863
 - inlay, 179–180
 - intraoral, 787–788
 - donor site, 787f
 - onlay, 177–179, 1274f
 - orbital floor
 - zygomatic arch fractures, 457
 - panfacial fractures, 551–552, 552f
 - sinus, 232–234, 241f
 - tibial, 791–792, 792f
 - vertical alveolar augmentation, 223–234
- Bone marrow needle, 108, 108f
- Bone morphogenetic proteins (BMP), 13, 785, 787
- Bone plates, 372f, 378f, 439
 - biomechanical effectiveness of, 377f
 - device, 185
 - fatigue, 379–380

- vs. lag screws, 379
- Le Fort I level fracture, 375f
- load-bearing fixation, 375f
- strong, 380f
- symphysis fracture, 382f
- Bone tunnel fixation, 1399f, 1400
- Booster seats, 529
- Botulinum toxin A, 1329
- Botulinum toxin-assisted brow lift, 1401
- Bowman-Birk inhibitor, 641
- Bowstring test, 496, 496f
- Brachycephaly, 889f, 895f, 908f
- Brachytherapy, 637
- Brackets, 1130f
- Bradycardia, 25
 - with hypertension, 345
- Brain
 - damage caused by hypertension, 32
 - growth
 - craniofacial dysostosis syndrome, 901–902
 - limitations, 887–888
- Brånemark drilling system, 191
- Brånemark protocol, 201
- Breast-feeding
 - cleft lip/palate, 844
- Breast-feeding mothers, 42
 - medications for, 42t
- Breath-holding test, 28
- Breathing
 - trauma patient, 332–337
- Bridging fixation. *See* Load-bearing fixation
- Bronchi
 - children, 103
- Bronchial asthma, 72
- Bronchiectasis, 73
- Bronchitis, 73
- Bronchoscope
 - rigid, 624
- Bronchospasm, 29
- Bronstein and Merrill arthroscopic staging IJD, 968t
- Brophy, Truman, 840
- Brow
 - youthful, 1384f
- Brow incision
 - lateral, 452, 482
- Brow lift, 1383–1403, 1395
 - bony landmarks, 1384–1389
 - complications, 1402–1403
 - endoscopic view, 1391–1393, 1396–1400, 1396f
 - muscle and fascial anatomy, 1385–1386
 - positions, 1383f
 - postoperative care, 1402
 - preoperative evaluation, 1393–1395
 - skin care and micropigmentation, 1401–1402
 - vessel and nerve anatomy, 1389–1391
- Brown dermatome, 718
- Brown technique, 423f
- Bruxism
 - drug-induced, 1023
 - implants, 252
- BSSO. *See* Bilateral sagittal split osteotomy (BSSO)
- Buccal advancement flaps, 772f
- Buccal artery, 144
- Buccal flaps
 - full-thickness mucoperiosteal, 866
- Buccal fragment
 - after osteotomy, 180f
- Buccal mucosa
 - flap, 1270f
 - squamous cell carcinoma, 621f, 642, 642f
 - verrucous carcinoma, 631f
- Buccal object rule, 133
- Buccal segment, 1257f
- Buccal space
 - borders of, 278t
 - infection, 279t
- Buccinator, 1184
- Buckshot, 513
- Bulimia, 39
- Bullets
 - diameter, 511
 - fragmentation, 511
 - kinetic energy, 510–511
 - velocity, 511
 - wounding power, 510–511
- Bullous pemphigoid, 691
- Bundle branch blocks, 28
- Büngner's band, 6
- Bupivacaine
 - for blepharoplasty, 1331
 - end-stage TMJ disease, 1017
- Burns, 1248f
 - TMJ
 - arthroscopy, 986
- Burow's triangle, 367f, 665f, 772
- Buser periosteal elevator, 213, 218
- Busulfan, 682
- Buttress, 547–548
- Butyrophenones
 - for psychotic disorders, 39
- C
- Cadaveric mandible tray
 - atrophic mandible, 182f
- Cadaveric mandibular adjustment, 183
- Calcified sialoliths, 674
- Calcifying epithelial odontogenic tumors, 592
- Calcifying odontogenic cysts (COC), 582, 583f
- Calcitonin
 - for central giant cell granuloma, 604
- Calcium channel blockers
 - for aortic regurgitation, 25
 - for hypertension, 32
- Calcium hydroxide paste, 388
- Caldwell-Luc procedure, 152, 232–234, 308, 309f
- Caldwell's view
 - zygomatic complex fractures, 448
- Caliber, 512
- Caloric response, 347, 347f
- Calvaria
 - bone formation in, 192–193
- Canaliculus, 364, 365f
- Cancellous grafts, 165
- Cancer chemotherapy
 - adjuvant, 639
 - immunocompromised, 283
 - induction, 639
 - neoadjuvant, 639
 - nonmelanoma skin cancer, 708
 - oral cancer, 638–640
 - palliative, 639
- Candida*, 680
- Candidosis, 680–681, 692
 - HIV, 689
 - oral, 680f, 681f
- Canine teeth
 - labially impacted
 - apical repositioned flap, 135f
 - removal of, 136
 - palatal impacted
 - removal of, 136
- Cannula, 1408–1409, 1409f
 - TMJ arthroscopy, 970
- Canthal ligament
 - lateral, 1321–1322
- Canthal ligaments, 1322f
- Canthal tendons, 446
- Canthotomy
 - lateral, 453
- Cantilevered fixed partial denture, 263, 263f
 - extension of, 265
- Cantilevering, 256f
- Capillary filling time, 338
- Capnography, 59
- Capsaicin
 - end-stage TMJ disease, 1017
- Capsular ligament, 936, 936f
- Capsular tightening procedure, 1005f
- Carbamazepine, 691

- Carbon dioxide lasers
 - photoaging, 1431
- Carbon dioxide snow, 386
- Carboplatin, 639, 640
- Cardiac assessment, 47–53
 - algorithm, 72f
 - arrhythmias, 51–52
 - automatic implantable cardioverter
 - defibrillators, 52–53
 - chest pain suggesting myocardial
 - infarction, 50
 - decompensated congestive heart failure, 50
 - myocardial ischemia, 48–49
 - recent myocardial infarction, 49–50
- Cardiac disease, 18–28
 - assessment of, 66–70, 107
 - cardiac dysrhythmias, 26–28
 - congestive heart failure, 26
 - coronary artery disease, 18–22
 - mitral valve prolapse, 24–25
- Cardiac dysrhythmias, 26–28
- Cardiac output
 - age-related changes, 41
 - children, 104–105
- Cardiac risk
 - index of, 67t
 - morbidity and mortality based on, 48t
- Cardiac tamponade, 338, 339
- Cardiomyopathy, 69
- Cardiovascular system
 - nicotine effect on, 57
 - normal function, 105t
- C-arm fluoroscopy unit, 499
- Carotid artery, 1248
- Carotid stenosis, 37
- Carpenter syndrome, 903
- Carroll-Girard screw, 451, 452f
- Cartilage. *See also* specific cartilage
 - nasal septum, 1357f
 - nose, 1347–1348
 - TMJ, 934–935
- Cartridges, 512
 - muzzle energy, 511t
 - velocities, 511t
- Cast cap splints, 415
- Cataplexy, 1298
- Cataract surgery, 472
- Cat bites, 362f
- Catecholamines, 338
- Cavernous sinus thrombosis, 278, 304
- Cavity, 511
- CCR, 30
- Cefazolin
 - for infectious endocarditis prophylaxis, 24t
- Cefotaxime, 944
- Cefpodoxime
 - for rhinosinusitis, 502
- Cefprozil
 - for rhinosinusitis, 502
- Cefuroxime
 - for rhinosinusitis, 502
- Celecoxib
 - for rheumatoid arthritis, 36
- Cell cycle, 576f
- Cellulitis, 282f
- Cemento-osseous dysplasia, 598–599
- Cement retention
 - vs. screw retention, 260t
- Central anticholinergic syndrome, 99–100
- Central giant cell granuloma, 603–605, 603f, 604f
- Central sleep apnea, 1298
- Cephalometric analysis, 1113f
 - craniofacial dysostosis syndrome, 905
- Cephalometric films
 - alveolar ridge, 163f
 - edentulous mandible, 194
 - implants, 253, 253f
 - lateral
 - facial asymmetry, 1209
 - for preprosthetic and reconstructive
 - surgery, 161
- Cephalometric radiographs
 - lateral
 - facial asymmetry, 1209
 - posteroanterior
 - facial asymmetry, 1209
- Cephalosporin
 - avoided with renal patients, 31
 - for rhinosinusitis, 305
 - for TMJ arthroscopy, 984
- Cerebral. *See* Brain
- Cerebral palsy, 1207
 - anesthesia with, 119
- Cerebrospinal fluid (CSF)
 - normal values of, 495t
- Cerebrovascular disease, 37
- Cervical incisions, 551
- Cervical lymphadenectomy
 - lip cancer, 666
- Cervical lymph nodes
 - levels, 619–620
 - squamous cell carcinoma, 646–648
- Cervical spine
 - injuries, 350–351
 - radiograph, 351, 351f
 - trauma patient, 330
- Cervical wire, 134
- Cervicofacial liposuction, 1407–1411
 - anesthesia, 1409
 - complications, 1411
 - history, 1407
 - indications for, 1407–1408
 - instrumentation, 1408–1409
 - patient evaluation, 1408
 - technique, 1410–1411
- Champy method, 373f
- Champy miniplate technique, 376
- Charcot-Leyden crystals, 301, 303
- Chase method, 40
- Cheek
 - augmentation, 1443–1446, 1445f
 - stabilization, 1444f
 - undermining, 1444f
 - high-velocity entrance wound, 520f
- Cheever, David, 435
- Chemexfoliation, 1341–1342
- Chemical peeling, 1341–1342, 1421–1422
 - deep, 1427–1429
 - medium-depth, 1424–1427, 1424t, 1425f, 1426f, 1431f
 - superficial, 1422–1423
- Chemoreceptor trigger zone, 100, 100f
- Chemotherapy. *See* Cancer chemotherapy
- Cherubism, 604–605, 605f
- Chest
 - examination of
 - in trauma patient, 348–349
 - normal radiography of, 348f
- Chest tube
 - for pneumothorax, 333, 334f
- Chest wall
 - children, 528
 - inspection of, 332
- Chewing, 405
- Child abuse, 384, 529
- Children, 42
 - abdomen, 528
 - adenoids, 103
 - aggressive mesenchymal tumors, 602
 - airways, 103, 528
 - anatomic considerations, 528–529
 - blood pressure, 105, 528
 - blow-in fractures, 536–537
 - blow-out fracture, 536–537
 - bronchi, 103
 - cardiac output, 104–105
 - cardiovascular system, 104–105
 - chest wall, 528
 - condylar process, 529
 - condyle fracture
 - open reduction, 539
 - cranial vault fractures, 532
 - craniomaxillofacial fractures, 527–542
 - complications, 531–532

- diagnosis of, 529–530
 - epidemiology of, 530–532
 - historic perspectives, 527–528
 - mechanism of, 530t
 - patterns of, 530, 532–542
 - prevention of, 529
 - by region, 530t, 531t
 - treatment, 531t
 - dentoalveolar injuries, 383–384, 397–398, 398t, 541–542
 - emergency treatment on full stomach, 106
 - endotracheal intubation, 104
 - facial trauma, 540f
 - fluid requirements for, 42t
 - FRC, 104
 - frontal sinus fractures, 532–534
 - hypothermia, 528
 - impacted teeth, 144
 - impacted tooth removal, 142–143
 - Le Fort (midface) fractures, 534
 - mandible, 529
 - mandibular condyle fractures, 538–539
 - mandibular fractures, 424–425, 538–542
 - mandibular subcondyle fractures, 538–539
 - maxillary fractures, 441
 - nasal air passages, 528
 - nasal fractures, 537–538
 - naso-orbitoethmoid fractures, 532–534
 - neural innervation, 105
 - paranasal sinuses, 529
 - parasymphseal fractures, 541
 - periosteum, 529
 - permanent tooth buds, 529
 - resorbable fixation materials, 542
 - ribs, 103
 - sedation, 103–123
 - anatomic and physiologic considerations, 103–105
 - perioperative complications, 115–116
 - pharmacologic agents, 110–115
 - preoperative evaluation, 105–106
 - routes of administration, 107–110
 - techniques for, 107–115
 - substance abuse, 120–123
 - supraorbital ridge fractures, 532
 - tongue, 103
 - tonsils, 103
 - trachea, 103, 104
 - upper respiratory infection, 106–107
 - urine output in, 42t
 - ventilation, 103
 - zygomatic complex fractures, 534–537
- Chin**
- alloplastic augmentation, 1435–1437
 - alloplastic implants
 - soft tissue changes associated with, 1232t
 - augmentation, 1438f
 - liposuction, 1412
 - poor esthetic results, 1241
 - ptosis, 1242, 1243f
- Chin cup, 1077f**
- Chinese gunpowder, 509**
- Chin-lift procedure, 330, 332f**
- Chin-neck anatomy, 1100**
- Chin point deviation**
- distraction, 1280f
- Chisel, 1248f**
- Chloral hydrate**
- children, 115
- Chlordiazepoxide**
- reduction in liver disease, 35
- Chlorhexidine**
- for alveolar osteitis, 151
- Cholesterol, 19**
- Chondrocytes, 934**
- Chondroitin**
- TMJ, 942
- Chondroma, 601, 602f**
- Chronic obstructive pulmonary disease (COPD), 29–30**
- Chronic renal disease**
- immunocompromised, 283
- Chuck changer, 242f**
- Chyle leak, 519f**
- Cicatricial pemphigoid, 690–691, 690f, 691f**
- Cigarette smoking, 300**
- involuntary exposure
 - risks of, 58
 - lip cancer, 659
 - perioperative effects of, 56–58
 - preoperative cessation of, 30
- Cilia, 297, 298f**
- Ciliary nerve, 1326**
- Cimetidine, 106**
- Cinch suture**
- alar base, 1237f
- Ciprofloxacin**
- for odontogenic infection, 289
- Circle of knowledge and caution, 1373–1374, 1375f**
- Circulation**
- trauma patient, 337–344
- Circumoral tissue**
- collapsed, 182f
- Circumvestibular incision, 1271, 1271f**
- intraoral mucosal, 534
- Cisatracurium**
- properties, 99t
- Cisplatin, 639, 640**
- Clarithromycin**
- for infectious endocarditis prophylaxis, 24t
 - for rhinosinusitis, 502
- Clavicle**
- bone formation in, 192–193
- Clear cell odontogenic carcinoma, 589**
- Cleft lip/palate, 839–855, 842f, 1206**
- bilateral repair, 847–849, 850f, 851f, 852f
 - bone graft reconstruction, 881
 - breast-feeding, 844
 - classification, 842, 843f
 - complex facial clefting, 853–855
 - dental and prosthetic rehabilitation, 883–884, 883f, 884f
 - embryology, 841
 - etiology, 841–842
 - feeding, 843–844
 - fistula closure, 872–875
 - indications for, 872–873
 - operative technique, 873–875, 873f, 874f
 - genetics, 841–842
 - historical perspective of, 840–841
 - incidence of, 1267
 - lip adhesion, 847
 - midfacial deficiency
 - orthognathic surgery, 881
 - nasal deformity reconstruction, 881–882
 - orthognathic surgery, 1267–1275
 - bone grafting with maxillary advancement, 1272–1273
 - presurgical counseling, 1270–1271
 - outcome, 855
 - prenatal counseling, 842–843
 - presurgical taping and orthopedics, 846–853
 - reconstruction stages, 871t
 - repair, 849–853
 - revisional surgery, 881–883
 - scar revision surgery, 882–883
 - secondary procedures, 871–884
 - staged reconstruction of, 845t
 - submucous, 880–881
 - treatment planning and timing, 844–846
 - unilateral repair, 847, 848f, 849f, 853f
 - velopharyngeal dysfunction, 875–880, 875f
 - complications, 879–880
 - operative technique, 878–879
 - timing, 877–878
 - Z-type repair, 849f
- Cleft maxilla/palate**
- bone grafting, 1269f
 - timing and sequencing, 1268–1269
- Cleidocranial dysplasia**
- multiple impacted teeth in, 132f
- Click-murmur syndrome, 69**
- Clindamycin**

- for infectious endocarditis prophylaxis, 24t
- for sinus infection, 305
- Clinical and dental model diagnosis, 1111–1118
- Clinical diagnosis, 564
- Clinical examination, 565–566
- Clinical impression, 564
- Clinical neurosensory testing (CNT), 825–826, 826t
 - algorithm, 827f
- Clinician
 - neophyte vs. expert clinician case study, 567–568
- Clip overdenture retention
 - two-implant bar, 194f
- Clonidine
 - for hypertension, 32
 - for hypertensive crisis, 50t
 - for opioid withdrawal, 39–40
- Closed lock phenomenon, 990
- Closed pneumothorax, 333, 335f
- Closed reduction, 401
 - mandibular fracture, 413–414
- Closed technique
 - subepithelial connective tissue grafting implants
 - recipient-site surgery, 214–215, 215
- Cloverleaf skull anomaly, 925–926, 926f
- CNT, 825–826, 826t
 - algorithm, 827f
- Coaptation, 832–833
- Cobalt
 - effect on wound healing, 12
- COC, 582, 583f
- Cocaine, 40
 - anesthesia with, 121
- Coil springs, 1126f
- Cold
 - common, 299
- Cold therapy
 - for TMJ, 956
- Collateral (diskal) ligaments, 936
- Colonial America, 189
- Combes' formula, 1422t
- Commando's operation, 645
- Comminuted fractures, 409f, 410
 - grossly, 410
 - mandible
 - fixation, 375
- Commissure height, 1090
- Common cold, 299
- Competitive antagonists, 84
- Complete strip technique, 1362f
- Complex fractures, 410
- Compliance, 22
- Complicated fractures, 410
- Composite grafts, 719
- Compound fracture, 409–410, 409f
- Compression (Raney) clips, 483
- Compression plates, 372f, 378f
 - AO/ASIF, 402
 - osteosynthesis
 - vs. noncompression plate osteosynthesis, 378
- Computed tomography (CT), 569
 - abdominal injuries, 352, 354t
 - ankylosis, 428f
 - asymmetric skull, 1209f
 - cervical lymph nodes, 647, 647f
 - cervical spine injuries, 351
 - condyle mechanical displacement, 1159
 - craniofacial dysostosis syndrome, 905
 - edentulous mandible, 194
 - facial asymmetry, 1209
 - frontal sinus
 - anterior table fractures, 499
 - posterior table fractures, 499
 - head trauma, 345, 346f
 - implants, 253, 270f
 - intracerebral hemorrhage, 346f
 - mandibular cancer, 645–646
 - mandibular fracture, 407
 - mandibular fragmentation
 - gunshot wounds, 520f
 - maxillary fractures, 439f
 - maxillary sinuses, 163f
 - NOE fracture, 496, 497f
 - oral cancer, 625, 625f
 - orbital fractures, 468, 470
 - OSA, 1301
 - osteomeatal complex, 303f
 - osteomyelitis, 315
 - panfacial fractures, 550–551, 550f, 551f
 - paranasal sinuses, 304f
 - pediatric craniomaxillofacial fractures, 529–530
 - preprosthetic and reconstructive surgery, 161
 - sinus infection, 302–303
 - subarachnoid hemorrhage, 346f
 - TMJ, 977f
 - zygomatic complex fractures, 447–448, 448, 449f, 450f, 454f
- Computer-databasing program, 1090f
- Computer-generated scanner, 1431
- Computerized cephalometric prediction, 1107–1108
- Concha bullosa, 298
- Conchal cartilage
 - autogenous, 1008
- Conchal hypertrophy, 1453
- Concussion, 391, 503
- Conduit nerve repair, 833f, 834t
- Condylectomy, 1009
- Condyles, 783–784
 - adenocarcinoma metastasizing to, 945
 - arthroplasty, 1003f
 - asymmetry
 - panoramic radiography of, 1208f
 - children, 529
 - classification of, 408
 - dislocation, 411f
 - fractures, 409, 1035f
 - abnormal growth from, 1208f
 - children
 - open reduction, 539
 - closed treatment, 382f
 - complications, 429–430
 - endoscopic management of, 421f
 - IMF, 415
 - mandibular hypoplasia, 427f
 - with midsymphysis fracture, 381
 - open reduction, 418–420
 - indications for, 419–420, 419t
 - panoramic films, 407, 407f
 - range of motion, 406
 - stabilization of, 422f–423f
 - surgery, 420
 - inappropriate positioning of, 1189f
 - mandible, 934f
 - mechanical displacement of, 1159
 - remodeling, 978f
 - resorption
 - idiopathic, 1291f
 - spontaneous resorption of, 1160
 - trauma, 1208
- Condylotomy, 1009
- Conformal radiation, 636–637
- Congenital agenesis
 - premaxilla, 1285
- Congenital anomalies, 1205, 1206–1207
 - altered anatomy in, 104
 - cleft lip/palate, 1206
 - congenital hemifacial hyperplasia, 1207
 - hemifacial microsomia, 1206, 1206f
 - plagiocephaly, 1206–1207
- Congenital hemifacial hyperplasia, 1207
- Congestive heart failure, 26, 67–68
 - decompensated, 50
 - ECG, 22
 - symptoms of, 22
- Connective tissue disorders, 36
 - implants, 252
- Conscious sedation, 93
- Contact sports, 383

- Contemporary orthognathic treatment
 - planning, 1087–1088, 1088f
- Context-sensitive half-time, 85, 86f
- Continuous passive motion (CPM), 540
 - device, 1044f
- Continuous positive airway pressure (CPAP)
 - OSA, 1304
- Continuous wire loop technique, 415
- Contractility, 49
- Contusions, 360, 397
- Converse-Wood-Smith technique, 1452–1453
- COPD, 29–30
- Copper
 - effect on wound healing, 12
- Cornea
 - abrasions, 470f, 1402
 - laceration, 472f
 - reflex, 347
- Coronal forehead lift, 1395
- Coronal incision, 483, 497
- Coronal synostosis
 - bilateral, 889
 - craniofacial skeleton, 904f
 - unilateral, 888–889
- Coronary artery disease, 18–22, 66–67
 - echocardiography, 19
 - history, 19
 - left ventricular dysfunction, 22–23
 - physical examination, 19
 - postoperative ECG, 20–22
- Cor pulmonale, 73
- Corrugator supercilii, 1387, 1389f, 1392
- Cortical grafts, 165
- Corticosteroids, 62t
 - for TMJ, 951–952
- Cortisol, 34
- Cortisporin
 - for TMJ arthroscopy, 984
- Cosmetic surgery
 - history of, 1317
- Cost
 - gunshot wounds, 510
- C osteotomy, 1136, 1137f, 1146–1150
 - different forms of, 1149f
- Costochondral grafts, 788–789
- Cottle elevator, 1357f
- Cover screws, 244f
- Cowley, R.A., 527
- COX-2. *See* Cyclooxygenase-2 (COX-2)
 - inhibitors
- CPAP
 - OSA, 1304
- CPM, 540
 - device, 1044f
- Cranial base
 - development of, 1060
 - malformations, 1065–1066
 - neonatal, 1061f
- Cranial bone grafts, 788, 788f, 789f, 790f
- Cranial nerves
 - peripheral, 357
- Cranial nerve VII, 1325
 - anatomy of, 1325f
 - marginal mandibular branch of, 1139–1140
- Cranial onlay bone grafts
 - maxilla, 263f
- Cranial vault, 897f
 - development of, 1059–1060
 - fractures
 - children, 532
- Craniofacial defects
 - maxillofacial prostheses, 268–269
- Craniofacial dysostosis syndrome
 - airway, 902–903
 - anthropometric surface measurements, 905
 - Apert syndrome, 915
 - brain growth, 901–902
 - Carpenter syndrome, 923
 - cephalometric analysis, 905
 - cranial vault dead space, 906–907
 - Crouzon syndrome, 907–915
 - CT, 905
 - dentition, 903
 - extremities, 903
 - frontoforehead esthetic unit, 903
 - hearing, 903
 - hydrocephalus, 902
 - ICP, 901–902
 - incision placement, 906
 - intervention timing, 906
 - maxillary-nasal base esthetic unit, 904
 - morphologic considerations, 903
 - occlusion, 903
 - orbitonasozygomatic esthetic unit, 903–904
 - Pfeiffer syndrome, 922–923
 - posterior cranial vault esthetic unit, 903
 - quantitative assessment, 904
 - reconstruction staging, 901–927
 - Saethre-Chotzen syndrome, 923–925
 - soft tissue, 907
 - surgery
 - historic perspectives, 905–906
 - vision, 902
- Craniofacial fibrous dysplasia, 597
- Craniofacial growth and development,
 - 1051–1080
 - during adulthood, 1064
 - dental development, 1063
 - embryonic period, 1051–1056
 - facial development, 1063–1064
 - factors influencing, 1064–1070
 - fetal period, 1056–1058
 - orthodontic camouflage, 1079–1080
 - orthopedic and orthodontic considerations,
 - 1070–1080
 - postnatal, 1058–1064
 - postnatal factors, 1068–1070
 - prenatal factors, 1065–1068
 - skeleton, 1058–1063
- Craniofacial malformations, 1065–1066
- Craniofacial skeleton
 - growth and remodeling field of, 165f
- Craniomaxillofacial fractures
 - children, 527–542
 - complications, 531–532
 - diagnosis of, 529–530
 - epidemiology of, 530–532
 - historic perspectives, 527–528
 - mechanism of, 530t
 - patterns of, 530, 532–542
 - prevention of, 529
 - by region, 530t, 531t
 - treatment, 531t
- Craniosynostosis. *See* Nonsyndromic cranio-synostosis
- Crawford tube, 364, 365f, 503
- C-reactive protein (CRP), 314
- Creatinine, 77
- Creatinine clearance (CCR), 30
- Crestal incision, 242
 - edentulous mandible, 194
 - for mylohyoid ridge reduction, 171
- Cribiform plate, 465
- Cricothyroidotomy, 281, 516
- Cricothyrotomy
 - children, 116
- Cromolyn sodium
 - for asthma, 56
- Cross-hair incision, 996
- Cross-lip mucosal flaps, 662, 665f
- Crouzon syndrome, 104, 907–915, 909f
 - and Le Fort III osteotomy, 527
 - and Le Fort I osteotomy, 916f
 - lower facial esthetic reconstruction,
 - 912–915
 - management of, 905
 - pediatric cranio-orbital procedure,
 - 910f–912f
 - primary cranio-orbital decompression,
 - 907–908
 - repeat craniotomy, 908–909
 - total midface deformity, 909–912
- Crown
 - fracture
 - with pulp involvement, 389

- without pulp involvement, 388–389, 390f
 - height, 1090
 - infracture, 387
 - splints, 224
- Crown-root fracture, 389
- Crow's feet, 1329, 1401
- CRP, 314
- Crural excision, 1362f
- Cryer, Matthew, 840
- Cryer elevator, 146
- Cryotherapy
 - for TMJ, 956
- CSF
 - normal values of, 495t
- CT. *See* Computed tomography (CT)
- Culture
 - odontogenic infection, 286–287
- Curve of Spee, 1107, 1126–1129, 1211
 - in maxillary arch, 1130
 - measurement for, 1107
 - and subapical osteotomy, 1128f
- Curve of Wilson, 1115, 1115f
- Curvilinear incision
 - partial-thickness, 213
- Cushing's disease, 34
- Cushing's phenomenon, 345
- Cuspid-molar position, 1115f
- Cutaneous horns, 698
- Cutback incisions, 219
- Cutting forceps
 - TMJ arthroscopy, 970
- Cyclooxygenase-2 (COX-2) inhibitors, 641
 - end-stage TMJ disease, 1019
 - for rheumatoid arthritis, 36
 - for TMJ, 951
- Cyclophosphamide, 682
- Cyclosporine
 - for rheumatoid arthritis, 36
- CYP-450, 85
- Cystic fibrosis, 301–302
- Cytochrome P-450 (CYP-450), 85
- Cytokines
 - TMJ, 942
- Cytomegalovirus, 686

- D
- Dacryocystorhinostomy, 364, 503–504
- DalPont's modification of sagittal osteotomy, 1137f, 1153
- Dantrolene, 38, 95
 - for malignant hyperthermia, 62–63
- Database acquisition and treatment planning, 1087–1109
- Data collection, 1088–1092
 - conventional records, 1088–1089
 - direct measurement, 1089–1090
- Davis, Christopher, 964
- Davis method, 1453–1454, 1453f, 1455f
- Débridement, 795f
- Deciduous teeth
 - impacted, 131
- Decongestants, 502
- Decortication, 1164f
- Deep bite, 1095f
- Deep heat
 - for TMJ, 956
- Deep spaces
 - head and neck
 - borders of, 278t
 - infections, 279t
 - severity score for, 278
- Deep temporal
 - infection, 279t
- Deep vein thrombosis
 - oral cancer, 635
- Defect fracture, 321f, 375
- Definitive restoration, 237f
- Deformities, 1205
- Degenerative joint disease, 1208
- Degree of dislocation, 408
- Degree of displacement, 408
- Delay, 710
- Delayed union
 - mandible, 425–426, 1251
 - maxilla, 1250–1251
- Delirium tremens, 635
- Deltpectoral flap, 778
- Dental arches, 548–549
- Dental caries
 - prevention of, 141
- Dental examination, 1105–1107
- Dental follicle, 575
- Dental fractures. *See* Alveolar and dental fractures
- Dental implants
 - alveolar distraction osteogenesis, 1290–1293
 - history of, 189–190
- Dental models
 - facial asymmetry, 1215f
- Dental papilla, 575
- Dental tissue injuries
 - diagram of, 388f
- DentaScan software, 645–646
- Dentate patients
 - intermaxillary techniques in, 415–417
- Dentigerous cyst, 576–578, 577f, 578f
 - vs. enlarged dental follicle, 577
 - prognosis, 577–578
- treatment, 577–578
- Dentition
 - craniofacial dysostosis syndrome, 903
- Dentoalveolar fracture, 409
- Dentoalveolar injuries, 383–399, 384f
 - adolescents, 383–384
 - children, 383–384, 397–398, 398t, 541–542
 - classification of, 387–388
 - etiology of, 383–384
 - hard tissue and pulp, 387–397
 - historic perspectives of, 383
 - incidence of, 383–384
 - maxillofacial examination, 384–386
 - patient history, 384
 - physical examination, 384
 - radiographic examination, 386–387
- Dentoalveolar trauma record, 386, 386f
- Dentofacial deformity
 - macroesthetic examination of, 1092–1102
 - miniesthetic examination of, 1102–1104
 - systematic clinical examination of, 1092–1107
- Dentures
 - bar-retained, 264f
 - conditioning material, 245f
 - fixed partial, 236f, 258
 - hybrid
 - implant, 254
 - mandibular hybrid, 265f
- Denture-sore mouth, 680
- Depression, 38, 1298
- Depressor muscle, 1394f, 1398f
- Depressors, 1385–1386
- Depressor supercillii, 1387
- Depth gauge, 242f
- Dermabrasion
 - full-face, 1432f
 - motorized, 1430–1432, 1431t
- Dermal fat grafts, 1414, 1414f
- Dermal graft, 1004f, 1006
- Dermal substitutes
 - wound healing, 13–14
- DermaSanding
 - manual, 1429–1430, 1430f, 1430t
- Dermatofibrosarcoma protuberans, 697
- Dermis, 709
- Desflurane, 95
 - chemical structure of, 96f
 - children, 115
 - pharmacology of, 97
- Desmoplastic fibroma, 602f, 603f
- Developmental anomalies, 1205, 1207
 - intrinsic jaw-growth deformities, 1207
 - secondary growth deformities, 1207
- Deviated septum, 1256f

- Dexamethasone, 100
 - impacted teeth removal, 149
- Diabetes, 281, 282, 424
 - effect on wound healing, 10
 - implants, 252
- Diabetes insipidus, 607
- Diabetes mellitus, 32–33, 59–61, 76–77
 - insulin, 60
 - type 2, 33
 - diet only, 60
 - oral hypoglycemic agents, 60
- Diabetic ketoacidosis (DKA), 32, 77
- Diagnostic list, 1118
- Diagnostic peritoneal lavage (DPL), 352, 354t
- Diagnostic process, 564–566, 564f
- Diamond fraise, 1430
- Diastolic decompensation, 23
- Diazepam
 - chemical structure of, 86f
 - end-stage TMJ disease, 1022
 - with ketamine, 111
 - pharmacology of, 86–87
 - reduction in liver disease, 35
- Diazoxide
 - for hypertensive crisis, 50t
- Diet
 - TMJ, 950
- Dietary supplements
 - determining preoperative risk, 17–18
- Differential diagnosis
 - developing, 566–568
 - to final diagnosis
 - case study, 564
 - microscopic, 571–572
- Differential osteotomy
 - knife-edge ridges, 1294f
- Digital videography, 1092, 1093f
- Digoxin
 - for congestive heart failure, 22–23, 26
- Dingman, Reed, 840
- Diplopia, 468, 474–475, 503, 1330
 - lower eyelid blepharoplasty, 1341
 - persistent posttraumatic, 474
 - upper eyelid blepharoplasty, 1340
 - zygomatic arch fractures, 458–459, 458f, 459f
- Dipyridamole
 - for cerebrovascular disease, 37
- Direct bone healing, 6, 7f
- Direct bone union, 371
- Direct brow lift, 1400
- Direct fixation, 401
- Direct fracture, 409f
- Direct wiring, 415
- Discoid lupus erythematosus (DLE), 691f
- Disk
 - horizontal incision, 996
 - partial displacement, 1000f, 1001f
- Diskal ligaments, 936
- Disk dancing, 1279, 1279f
- Dislocated fracture, 410
- Displaced fracture, 410
- Displaced tooth, 1115f
- Displaced zygomatic complex
 - elderly, 486f–487f
- Displacements, 391
- Dissector, 1368f
- Distal root
 - overdevelopment of, 140
- Distoangular impaction, 143
 - bone removal, 146
 - removal of, 148f
- Distoangular teeth
 - eruption, 140
- Distraction approach, 906
- Distraction devices
 - disadvantages of, 1292
- Distraction osteogenesis, 1277–1294, 1293f
 - alveolar, 183–185, 230–231
 - dental implants, 1290–1293
 - bony edge separation, 1277f
 - complications of, 1293–1294
 - mandibular symphysis, 1124–1125, 1125f
 - mandibular widening, 1280–1281
 - protocol, 1278t
 - and regenerate chamber, 1278f, 1279f
 - simultaneous maxillary and mandibular, 1281–1282
 - soft tissue changes associated with, 1233, 1234t
 - transport, 1286–1289, 1289f
 - neocondyle, 1289–1290
- Distractor, 1281f
- DKA, 32, 77
- DLE, 691f
- Dog bites, 362
- Dog-ears, 715f
- Doll's eye reflex, 347, 347f
- Donor tissue
 - soft tissue grafts, 209
- Dorsal hump
 - removal of, 1358f
- Dorsal nasal artery, 1346
- Dorsal reduction, 1359f
- Double advancement flap, 771f
- Double-ring sign, 533
- Double vision, 469f
- Double V-Y closure, 1239–1241, 1242f
- Down syndrome, 74, 1066
 - anesthesia with, 119–120
- Doxacurium
 - properties, 99t
- DPL, 352, 354t
- Draining sinus tract, 292f
- Dressing plate, 613f
- Drug dependence, 1298
- Dry eye
 - upper eyelid blepharoplasty, 1340
- Dry socket. *See* Alveolar osteitis
- D-tubocurarine
 - properties, 99t
- Dual-incision approach
 - subepithelial connective tissue graft
 - harvesting, 212–213, 214
 - subepithelial connective tissue grafting, 213f
- Dual-suture alar cinch technique, 1239f
- Duchenne's disease
 - anesthesia with, 120
- Duchenne's muscular dystrophy, 1207
- Dufourmental flap, 714–716
- Duke University Activity Status Index, 70, 71t
- Dying patient
 - avoidance of, 652–653
- Dynamic sphincter pharyngoplasty, 878
- Dysplastic nevi, 683
- E
- Ear, 1451. *See also* Protruding ear
 - avulsive injuries, 368f
 - blood supply, 1450–1451, 1452f
 - defect conversion, 367f
 - deformities, 1451–1452
 - development of, 1450f
 - embryology of, 1449
 - hematomas, 365–366
 - injuries, 365–366, 366f
 - nerve supply, 1451
 - osseointegration implants, 368f
 - surgical anatomy of, 1449–1450
- Earlobe
 - protruding
 - correction of, 1456
- EB. *See* Epidermolysis bullosa (EB)
- EBV, 686, 688
- Ecchymosis, 405f, 437, 447, 494, 685
 - upper eyelid blepharoplasty, 1340
- Economically disadvantaged
 - maxillofacial trauma, 384
- Ecstasy
 - anesthesia with, 121–123
- Ectodermal dysplasia, 238f
- Edentulism
 - functional effects of, 158–159
- Edentulous fractures
 - mandibular fracture, 423–425

- Edentulous mandible, 193–197
 flap design for implant placement, 207f
 incision design, 194
 osseointegration, 193–197
 physical examination, 194
 prepared for bone graft, 224f
 radiologic examination, 194
 simultaneous gingival grafting, 212f
 Edentulous maxilla, 197–199, 197f, 226f–227f, 228f
 atrophy, 236f
 flap design for implant placement, 207f
 Parel's classification of, 197
 with severe atrophy, 232f
 Edentulous patients
 alveolar bone characteristics, 157–158
 closed reduction, 417
 Edentulous restorations, 263–264
 FDP, 265–266
 implant-retained overdentures, 263–264
 implant-supported overdentures, 264–265
 Edinger-Westphal nucleus, 347
 EDTA, 944
 Eight-ball hyphema, 472–473
 Elastic fibers, 709
 Elderly, 40–42
 displaced zygomatic complex, 486f–487f
 drug modifications in, 41–42
 hypertension, 49
 impacted teeth, 142–143, 144, 149
 maxillary fractures, 441
 orbital injuries, 481
 wound healing, 12
 Elective lymph node dissection, 667
 Elective neck dissection (END), 647, 648
 vs. elective neck irradiation, 650
 Electric drill, 145
 Electrolytes and acid-base disturbances, 53–54
 Electrometric test, 386
 Elevators, 1385–1386
 Buser periosteal, 213, 218
 Cottle, 1357f
 Cryer, 146
 J-shaped, 1438, 1438f
 curved hook, 450
 periosteal, 866, 1387f
 TMJ arthroscopy, 970, 971f
 Elevator technique, 136
 Elliptic incision
 for frenum attachment excision, 173
 Ellis classification, 387, 387f
 Ellis technique, 423f
 Embryo, 1052f
 amnion, 1053f
 lateral view, 1053f
 scanning electron micrograph, 1055f
 Emergence delirium, 93
 Emergency treatment on full stomach
 children, 106
 Eminectomy, 1046
 Emphysema, 73
 Enalaprilat
 for hypertension, 32
 for hypertensive crisis, 50t
 Enamel fractures, 387
 Enamel organ, 575, 575f
 END, 647, 648
 vs. elective neck irradiation, 650
 Endocarditis
 cardiac conditions associated with, 23t
 prophylaxis if, 24t
 Endochondral bones
 formation of, 192–193
 Endocrine disorders, 32–34, 59–61, 74–77
 diabetes, 281, 282, 424
 effect on wound healing, 10
 implants, 252
 diabetes insipidus, 607
 diabetes mellitus, 32–33, 59–61, 76–77
 insulin, 60
 type 2, 33, 60
 hyperglycemia, 60–61
 hypoglycemia, 60–61
 thyroid disorders, 33–34
 Endonasal rhinoplasty
 surgical sequence for, 1356t
 Endoscopic lens system
 TMJ
 arthroscopy, 970f
 Endoscopy
 sinus infection, 302–303
 complications of, 309
 Endosseous implants, 191–192, 270f
 long-term
 first, 189
 Endotracheal intubation
 children, 104
 for flail chest, 337
 Endotracheal tube stabilizer pad, 980f
 End-stage renal disease (ESRD), 31, 77
 End-to-side anastomosis, 805f
 Enflurane
 avoided with renal patients, 31
 chemical structure of, 96f
 England, 189
 Enophthalmos, 468, 479
 zygomatic arch fractures, 457–458, 458f
 Entubulation (conduit) nerve repair, 833f, 834t
 Entubulation techniques, 833–834
 Envelope flap, 144, 146f
 Envelope incision, 144, 145f
 Environment
 craniofacial growth and development, 1068–1070
 craniofacial malformations, 1066–1068
 Enzyme induction, 85
 Ephelides, 683
 Epidermis, 709
 Epidermodysplasia verruciformis, 698
 Epidermolysis bullosa (EB), 685–686
 atrophicans generalisata gravis Herlitz type, 686
 bullosa acquisita, 686
 Cockayne-Touraine type, 686
 dystrophica Hallopeau-Siemens, 686
 simplex Koebner type, 686
 Epidural hemorrhage, 345f
 Epilepsy, 78
 Epinephrine, 95, 338, 340
 for arrhythmias, 52
 for blepharoplasty, 1331
 Epiphora, 364, 1263, 1327
 Epistat, 438
 Epistaxis, 437
 Epithelialized palatal graft technique
 implants, 210–111
 Epstein-Barr virus (EBV), 686, 688
 ePTFE, 223
 Erich arch bars, 415f
 Erythema multiforme, 693–694, 694f
 Erythematous lesions, 685–686
 Erythrocyte sedimentation rate (ESR), 314
 Erythromycin
 for COPD, 30
 Erythroplakia, 618, 619, 619f
 Esmolol
 for hypertensive crisis, 50t
 Esophagoscopy, 624
 vs. barium swallow
 for neck gunshot injuries, 518
 ESR, 314
 ESRD, 31, 77
 Essential hypertension, 31–32, 37
 Esthetic facial augmentation
 alloplastic, 1435–1447
 Esthetic flaps, 710
 Esthetic implants
 flaps, 207f
 Esthetic ridge defect
 large-volume combination hard and soft tissue reconstruction of, 219f
 Esthetic tooth wax-up, 200
 Estlander flap, 664

- Etanercept
 for rheumatoid arthritis, 36
 Ethanol, 35
 Ethmoid bone, 437, 465
 Ethmoid bulla
 anatomy and physiology of, 297
 Ethmoid fracture, 535f
 Ethmoid sinus, 494f
 anatomy and physiology of, 297
 Ethylenediaminetetraacetic acid (EDTA), 944
 Etomidate
 chemical structure of, 92f
 pharmacology of, 92
 Exarticulations, 393–394
 Excisional biopsy, 570, 704
 Exercise therapy
 for TMJ, 954–955
 Exercise tolerance
 assessment of, 70–71
 determining preoperative risk, 17
 Exfoliative cytology, 569–570
 Exophthalmos, 468, 495, 607
 Exostoses, 169
 Expanded polytetrafluoroethylene (ePTFE), 223
 Extended neck dissection, 649
 External auditory canal
 sectioned, 995f
 External ballistics, 510
 External ear
 anatomy of, 1451f
 External fixator, 796f
 External neurolysis, 830–831
 External pin fixation, 416
 External rhinoplasty
 surgical sequence for, 1356t
 Extraction
 vs. nonextraction, 1130
 Extraction wounds, 7–8
 Extraoral inverted L osteotomy, 1147f, 1148f
 Extraoral vertical subcondylar osteotomy, 1145f
 Extraosseous devices, 184–185
 Extravasated blood
 lesions, 685
 Extravasation
 with TMJ arthroscopy, 984–985
 Extremities
 craniofacial dysostosis syndrome, 903
 examination of
 in trauma patient, 353–354
 Extrusive luxation, 392
 Eyebrows
 anatomy, 1318
 examination of, 1328
 fat pad, 1318
 female position, 1318f
 male position, 1318f
 reconstruction of, 363
 Eyelids. *See also* Lower eyelids; Upper eyelids
 aging skin changes, 1319
 arteries, 1324
 avulsive injuries of, 362f
 cheek contour, 1318
 connective tissue, 1321
 crease reformation, 1332–1334
 cross-section, 1319f
 fat pads, 1323
 innervation, 1325–1326
 laceration, 470f, 475, 476f
 layers of, 466t
 lymphatics, 1324–1325
 musculature, 1322–1323
 normal position of, 1320f
 reconstruction
 history of, 1317
 resection of, 364f
 skin thickness, 1319
 soft tissue injuries, 364–365
 surgical repair of, 364f
 topography, 1319–1320
 vasculature, 1324
 veins, 1324
 Eyes
 adnexa, 1319–1326
 examination of, 447
 injuries, 471–476
 sagittal view of, 455f
 surface evaluation, 1330
 F
 Face
 asymmetry, 412f
 bones, 192–193
 and reconstruction, 164
 buttresses, 547–548
 developing, 1054f
 esthetic augmentation
 alloplastic, 1435–1447
 examination of, 404–405
 expression muscles, 445
 fractures
 evaluation of, 405
 frontal view of, 1057f
 gunshot wounds, 363, 363f
 blind clamping, 516f
 hemiatrophy, 1207, 1207f
 horizontal buttresses of, 548f
 liposuction
 postoperative instructions, 1418
 lower
 for macroesthetic examination, 1100, 1101
 macroesthetic examination, 1100, 1101
 profiles, 1101
 Dedo classification of, 1367f, 1367t
 prosthesis, 270f
 scars, 1263
 skeleton
 surgical approach to, 551, 551f
 trauma
 children, 540f
 psychosocial issues, 384
 vertical buttresses of, 548f
 wounds, 357
 grazing gunshot, 523f
 Face-bow transfer, 1215f
 Face lift
 dressing, 1373f
 skin incision, 1376f
 Facemask, 1078f
 Facial artery, 1346, 1389
 Facial asymmetry, 1205–1217, 1267
 acquired, 1208
 condylar trauma, 1208
 degenerative joint disease, 1208
 juvenile idiopathic arthritis, 1208
 basal view, 1214f
 clinical assessment of, 1208–1209
 delayed treatment, 1210
 etiology, 1205
 frontal view, 1217f
 lateral and frontal view, 1216f
 midface deficiency, 1213f
 orthodontic considerations, 1210–1212
 radiography, 1209
 surgery, 1209–1216
 techniques, 1212–1216
 TMJ function, 1210
 Facial nerve, 357, 483, 992, 1325, 1390
 anatomy of, 358f
 zone of arborization, 358f
 gunshot wound, 522
 landmarks, 993f
 Facial primordia
 development of, 1053–1054
 Falls, 383, 530
 Familial gigantiform cementoma, 599
 Fasting, 105–106
 Fat debulking, 1332
 Fat embolism syndrome, 341f, 354
 Fat grafts, 1401
 abdominal
 harvest of, 501, 501f
 dermal, 1414, 1414f

- Fat injection
autologous, 1413–1414, 1414f
- Fat pads, 1322f
- Fat transfer
autologous, 1412–1415
complications, 1414–1415
- Femur
fracture of, 341f, 353
- Fenoldopam
for hypertensive crisis, 50t
- Fentanyl
chemical structure of, 88f
children, 115
end-stage TMJ disease, 1022
pharmacology of, 88–89
- Fernandez technique, 423f
- Fetus
changing body proportions, 1059f
- FEV1, 56f
- Fever
odontogenic infection, 283, 287–288
with osteomyelitis, 314
- FFP, 343
- Fiberoptic laryngoscopy
children, 528
- Fiberoptic nasal examination, 295
- Fibrin clots, 8
- Fibroblasts, 5, 786
- Fibroma
mandible, 313f
- Fibromyalgia, 941
- Fibro-osseous disease
benign, 597–600
cemento-osseous dysplasia, 598–599
fibrous dysplasia, 597–598
- Fibro-osseous neoplasms
juvenile aggressive ossifying fibroma, 600
ossifying fibroma, 599–600
- Fibrous dysplasia, 597–598, 597f, 598f
- Fibrous inflammatory hyperplasia, 172
- Fibular grafts, 268
- Field of vision
TMJ
arthroscopy, 970f
- Figure-eight alar cinch suture technique, 1238f
- Figure-of-eight wire, 421, 424f
- Final diagnosis
determining, 568–569
- Fine-needle aspiration biopsy (FNAB), 570, 704
parotid gland tumors, 672
- Firearms
terminology of, 512–514
- First molars
progressive soft tissue recession, 212f
- Fissure bur, 146f, 242, 242f
- Fistulas, 1252–1253
residual oronasal, 1271
- Fitzpatrick skin types, 697, 698t
- Fixed crown-and-bridge restoration, 197, 197f, 198
- Fixed partial denture (FPD), 236f, 258, 260–263, 263, 263f
anterior mandible, 262
cantilevered, 263, 263f
esthetic zone, 261–262
extension of, 265
mandibular, 268f
posterior mandible, 262–263
posterior maxilla, 262
- Flail chest, 332, 335–336, 336f
- Flaps, 710–711. *See also* specific flaps
blood supply, 770
complications, 780–781
configuration, 770
design, 712–716, 771–772
implants, 205–208, 206f, 207f
lateral advancement, 208, 208f
location, 770
necrosis, 709
nomenclature, 770–771
principles, 769–771
superiorly based, 779f
tissue content, 770
transfer method, 770–771
types of, 772–780
undermining, 712
- Flavopiridol, 640
- Flexor
abnormal activity, 346
- Floating forehead technique, 905
- Floating teeth, 607, 608f
- Floor of mouth
cancer, 621–622, 622f, 644
examination of, 406
lowering procedures, 175, 179f
squamous cell carcinoma, 644f
- Florid cemento-osseous dysplasia, 599, 599f
- Fluctuance, 280
- Fluid
management
oral cancer, 635
requirements in children, 42t
- Flumazenil, 86
chemical structure of, 86f
pharmacology of, 87
- Fluorescein dye, 470, 499
- Fluoroquinolone
for rhinosinusitis, 305
- 5-fluorouracil, 639, 640
- Fluoxetine (Prozac)
TMJ, 953
- FNAB, 570, 704
parotid gland tumors, 672
- Focal cemento-osseous dysplasia, 599
- Foley catheter
contraindications for in trauma patients, 343f
- Follicular sac
dentigerous cyst in, 141
odontogenic tumor in, 141
- Fontana-Masson stain, 683–684
- Fontanelles
neonatal skull, 1060f
- Forced expiratory volume in 1 second (FEV1), 56f
- Forced vital capacity (FVC), 56f
- Forceps, 308f
- Forehead, 1383–1403
anatomy, 1318, 1384–1389
bony landmarks, 1384–1389
endoscopic view, 1390f, 1391–1393, 1391f
esthetic considerations, 1384–1389
flaps, 774
lift
complications, 1402–1403
endoscopic, 1396–1400, 1396f
postoperative care, 1402
skin care and micropigmentation, 1401–1402
muscle and fascial anatomy, 1385–1386
positions, 1383f
preoperative evaluation, 1393–1395
soft tissue injuries, 363–364
vessel and nerve anatomy, 1389–1391
youthful, 1384
- FPD, 263, 263f. *See also* Fixed partial denture (FPD)
extension of, 265
- Fractionation, 636
- Fractured teeth
assessment of, 385
- Fracture lines, 408
- Fractures. *See also* specific fractures
bone healing after, 6
- Frank-Starling curve, 24
- FRC
children, 104
- Free autogenous grafts, 786t
- Free fibula flap, 811–814, 814f
anatomic considerations, 811–813, 811f
elevation, 813f
morbidity following, 813–814
technique, 812–813
- Free flaps. *See also* Radial forearm free flaps
iliac crest osteomyocutaneous, 814–815

- microvascular, 792
- radial forearm, 804–811
- Free gingival grafts, 210
- Free tissue transfer
 - head and neck, 803
 - versatility of, 815–816
- Frenectomy, 172–174
- Frenum attachments
 - excision of, 173, 173f, 174f
 - exposure of, 173f
 - wide-based, 174
- Fresh frozen plasma (FFP), 343
- Frey's syndrome, 1263
- Fricke, Johann Karl George, 1317
- Frontal bone, 491, 492f, 1384
 - fracture, 535f
 - injuries
 - complications of, 503
 - ossification of, 491
 - osteology of, 492–493
 - posttraumatic deformity correction, 504–505
- Frontalis muscle, 1318, 1385–1386, 1387f
- Frontal recess
 - anatomy and physiology of, 297
- Frontal sinus, 492f, 494f
 - anatomy and physiology of, 491–494
 - anterior table fractures, 499
 - depressed injury, 495
 - development of, 491
 - embryology of, 491
 - fractures, 495f
 - children, 532–534
 - classification of, 496–497
 - clinical findings, 494–497
 - patient evaluation, 494–497
 - surgery, 497–502
 - neovascular structures, 493
 - osteology of, 492f
 - physiology of, 491–492
 - posterior table fractures, 499–500
- Frontoforehead esthetic unit
 - craniofacial dysostosis syndrome, 903
- Frown lines
 - glabella, 1389f
- Frozen section specimens, 634f
- Full-arch ceramometal restoration, 265, 266f
- Full histologic periosteal refixation, 1399
- Full-jacketed bullet, 514f
- Full-metal jacket, 514
- Full-thickness mucoperiosteal buccal flaps, 866
- Full-thickness skin grafts, 8, 717–718
- Functional appliances, 1075f
- Functionally stable fixation, 371–372, 373
- Functional matrix concept, 164
- Functional residual capacity (FRC)
 - children, 104
- Fungal balls
 - maxillary sinus, 303f
- Fungal disease
 - oral cavity, 680–681
- Fungal sinusitis, 303–304
- Furlow double opposing Z-plasty procedure, 876
- Furnas technique, 1452
- Furosemide
 - for congestive heart failure, 22
- Fusobacterium*, 140, 288
- FVC, 56f
- G
- GABAergics, 1024
- Gabapentin
 - for seizure disorders, 37
- GABA receptor, 84
- Galeal tissue, 1399
- Galen, 383
- Gamma-aminobutyric acid (GABA)
 - receptor, 84
- Ganglion cysts
 - TMJ, 945
- Gap arthroplasty, 1038, 1290f
- Gastritis, 35
- Gastroesophageal reflux disease (GERD), 300, 1298
- Gauge, 512
- GCS. *See* Glasgow Coma Scale (GCS)
- General anesthesia
 - risk after myocardial infarction, 20
- Gene therapy
 - wound healing, 13
- Genetics
 - craniofacial growth and development, 1068
 - craniofacial malformations, 1065–1066
- Genial advancement
 - with hyoid myotomy and suspension
 - OSA, 1307–1308
 - OSA, 1307
- Genial segment surgical procedures
 - anterior repositioning, 1229–1232
 - posterior repositioning, 1232–1233
 - soft tissue changes associated with, 1229–1233
 - vertical repositioning, 1233
- Genial tubercle
 - advancement, 1307f
 - reduction, 169–170
- Genioglossus attachment, 175
- Genioglossus muscle, 169
- Genioplasty
 - advancement
 - soft tissue changes associated with, 1232t
 - reduction
 - soft tissue changes associated with, 1233t
 - setback
 - soft tissue changes associated with, 1233t
- Genitourinary tract
 - examination of
 - in trauma patient, 353
- GERD, 300, 1298
- Geriatric patients. *See* Elderly
- German measles, 689
- Germinated tooth, 136f
- Germ layer formation, 1051
- GFR, 30
- Ghost cell tumor
 - malignant epithelial odontogenic, 589
- Giant cell granuloma
 - central, 603–605, 603f, 604f
- Giant cell tumor, 604
- Gilles's approach, 451f
- Gillies, H., 527
- Gillies and Harrison total midface advancement, 527
- Gingiva
 - examination of, 406
 - excess display on smile, 1102–1103, 1103f
 - grafts
 - dental implants, 210–211, 210f
 - indications for, 211
 - edentulous mandibular site, 212f
 - melanin pigmentation
 - smoking, 682
 - squamous cell carcinoma, 644–645
 - trauma
 - treatment, 396–397
- Ginglymoarthrodial, 933
- Ginglymoid, 933
- Glabella
 - crease, 1393
 - frown lines, 1389f
 - lacerations, 494
 - vertical rhytids, 1398
- Glargine
 - onset, peak and duration, 61t
- Glasgow Coma Scale (GCS), 78, 78t, 329t
 - development of, 328
 - for grading consciousness, 346
 - and head injuries, 348
- Glenoid fossa
 - coronal section, 992f
 - horizontal incision, 996
- Gliding hole, 379
- Globes

- evaluation of, 468
- penetrating injury, 472
- perforated, 516f
- Globulomaxillary lesion, 608, 609f
- Glogau's classification
 - photoaging, 1419, 1419t
- Glomerular filtration rate (GFR), 30
- Glossectomy, 643
- Glucocorticoids
 - for asthma, 56
 - for rheumatoid arthritis, 36
 - for TMJ, 951
- Gluconeogenesis, 35
- Glutamine, 12
- Glycogen storage, 35
- Glycolic acid, 1341
 - resorbable plating system, 441–442
- Glycopyrrolate, 99, 106
 - with ketamine, 111
- Goiter, 76
- Goldenhar's syndrome, 74, 104
- Goldman Index, 66
- Gold salts
 - for rheumatoid arthritis, 36
- Gold wire splinting
 - Lebanon, 383f
- Gompertzian kinetics, 638
- Gonial arc, 1140f
- Gonorrhea, 682
- Goode method, 1353, 1353f
- Gorham's disease, 612, 612f
- Gorlin's syndrome, 698
- Grafts, 710. *See also* specific graft
- Granulation tissue, 5
- Grasping forceps
 - TMJ arthroscopy, 970
- Graves' disease, 76
- Grayson nasoalveolar molding appliance, 846f
- Greater auricular nerve, 1371f
 - cable graft, 833f
- Greenstick fracture, 410
- Grossly comminuted fractures, 410
- Ground substance, 709, 934, 935
- Group A Coxsackievirus, 688
- Growth
 - factors
 - effect on wound healing, 12–13
 - mandibular fracture, 426
 - modification
 - orthopedic treatment for, 1070–1079
- Growth deformities
 - secondary, 1207
- Guided bone grafts
 - augmentation, 223
- Gullwing incision, 497
- Gummy smile, 1097f
- Gunning's splints, 440–441, 441
- Gunshot wounds, 509–524
 - bone grafting, 523–524
 - classification of, 514–515
 - closed vs. open management, 522–527
 - contamination, 522
 - cost, 510
 - delayed vs. early management, 522–527
 - demographics, 509–510
 - face, 363, 363f
 - blind clamping, 516f
 - hemorrhage, 516–517
 - history, 509
 - incidence, 509–510
 - late reconstruction, 524
 - mandible, 795f
 - mouth, 521f
 - neck, 517–519
 - decision tree, 519f
 - surgery, 520–522
 - treatment, 515–522
- Gustatory sweating, 1263
- H
 - Haemophilus influenzae*, 300, 305
 - TMJ, 944
- Hageman factor, 4
- Hairy leukoplakia, 689
- Haller cell, 298
- Halothane, 95f
 - for asthma, 56
 - chemical structure of, 96f
 - children, 114
 - pharmacology of, 93, 96
- Hamartomatous fibro-osseous disease, 597
- Handguns, 512
- Hank's balanced salt solution, 393, 393f
- Hard palate
 - cancer, 622, 622f
- Hardy, Michael, 964
- Harness restraints, 529
- Haversian remodeling, 371
- Head
 - assessment of
 - in trauma patient, 345–346
 - examination of, 357
- Headache, 1299
 - frontal sinus, 503
- Head and neck
 - assessment
 - odontogenic infection, 277–278
 - cancer, 697–720
 - inoperable, 652
 - survival, 652
 - treatment failure, 652
- deep spaces of
 - borders of, 278t
 - infections, 279t
 - severity score for, 278, 280t
- free tissue transfer, 803
- infections of
 - drainage of, 285f
 - radiation
 - implants, 252
- Headgear, 1074f, 1076f, 1078f
- Healing by secondary intention, 710–711
- Hearing
 - craniofacial dysostosis syndrome, 903
- Heart
 - age-related changes, 41
 - of infants, 42
- Heart blocks, 27–28
- Heat therapy
 - for TMJ, 956
- Hemangioendothelioma
 - salivary gland, 672
- Hemangiomas, 684
- Hematomas, 685
 - in bone healing, 6
 - cervicofacial liposuction, 1411
 - ear, 365–366
 - flaps, 780
 - maxillary fractures, 442
 - nasal septum, 364
 - protruding ear, 1457
 - upper eyelid blepharoplasty, 1340
 - in wound healing, 10
- Hematuria, 353
- Hemifacial hyperplasia
 - congenital, 1207
- Hemifacial microsomia, 104, 1206, 1206f
- Hemimandibular hyperplasia/elongation, 1207
- Hemorrhage. *See* Bleeding
- Hemostasis, 10, 357
- Hemothorax, 334–335
- Hemotympanum, 346
- Heparin
 - DVT, 635
 - in spinal cord disorders, 38
- Hepatitis, 35
- Hepatitis A, 35
- Hepatitis B, 35
- Hepatitis C, 35
- Hepatogastrointestinal disorders, 34–36
 - liver disease, 34–35
 - peptic ulcer disease, 35–37
- Herbal supplements
 - determining preoperative risk, 18
- Herbst appliance, 1303

- Hereditary diseases, 685–686
- Herpes
cytology, 687f
- Herpes simplex infection, 1432
- Herpes simplex virus (HSV), 686
- Herpes zoster, 688f
- Herpetic
gingivostomatitis, 686f
- Herpetic gingivostomatitis, 686f
- Herpetic whitlow, 687, 687f
- Hertwig's root sheath, 575
- Hexed implant, 256f
- High-flow vascular malformation, 606f, 607f
- High-velocity accident, 350
- High-voltage stimulation
for TMJ, 956
- Hilum
calcified stone
sialogram, 675f
stones, 675–676
- Hippocrates, 383
- Hirudo medicinalis*, 780
- Histamine antagonists
children, 117
- HIV. *See* Human immunodeficiency virus (HIV)
- Hofer's subapical osteotomy, 1138f
- Holmium:YAG (HO:YAG) lasers
TMJ arthroscopy, 971
- Hooding, 1393
- Hooked probe
TMJ arthroscopy, 970
- Horizontal glabellar lines, 1398
- Horizontal impaction, 143, 147f
bone removal, 145–146
- Horizontal osteotomy
for horizontal chin deficiency, 1172f
for horizontal chin excess, 1171f
of the symphysis, 1168–1173, 1168f
complications, 1173
indications for, 1168
technique, 1168–1173
various forms of, 1169f–1170f
- Horizontal osteotomy of vertical ramus
Blair's, 1135, 1136f
- Horizontal ramus
sagittal osteotomy, 1164
- Horizontal tightening, 1335
- Hoshino, Kazumasa, 964
- Hospice, 653
- HO:YAG lasers
TMJ arthroscopy, 971
- HPV
squamous cell carcinoma, 617
- HSV, 686
- Hullihen's mandibular subapical osteotomy,
1135, 1135f
- Human bites, 362
- Human immunodeficiency virus (HIV),
11, 689
immunocompromised, 283
implants, 252
- Human papilloma virus (HPV)
squamous cell carcinoma, 617
- Hunsuck modification, 1254
- Hyaluronidase
for blepharoplasty, 1331
- Hybrid dentures
implant, 254
- Hydantoin, 682
- Hydralazine, 691
- Hydration
for fever, 287
- Hydrocephalus
craniofacial dysostosis syndrome, 902
- Hydrocodone
for TMJ, 951
- Hydrogen peroxide, 360
- Hydroxy acids, 1421
- Hydroxychloroquine
for rheumatoid arthritis, 36
- Hydroxylapatite coatings
implants, 190, 192
- Hyoid myotomy, 1308f
- Hyoid suspension, 1308
- Hyperbaric oxygen therapy
flaps, 780–781
implants, 252
jaws, 794
odontogenic infection, 281
osteomyelitis, 317
osteoradionecrosis, 320
wound healing, 11–12
- Hyperdivergent faces, 1211
- Hyperfractionation, 636
- Hyperglycemia, 60–61, 77, 344
effect on wound healing, 10
- Hyperkalemia, 31
- Hypermobility tissue, 172
- Hyperparathyroidism, 603, 604, 605f
- Hyperpigmentation, 1425f
- Hypersomnolence, 1298
- Hypersplenism, 35
- Hypertension, 31–32, 49, 1299
African Americans, 49
with bradycardia, 345
elderly, 49
essential, 31–32, 37
and preoperative patient assessment, 69–70
risk factors for, 70
- Hypertensive crisis
medications for, 50t
- Hypertensive urgency, 49
- Hyperthyroidism, 33–34, 61–62, 76
- Hypertrophic cardiomyopathy, 69
- Hypertrophic scars, 9, 359
protruding ear, 1458
- Hypertrophic subaortic stenosis
idiopathic, 69
- Hyphema, 470, 472, 473f
- Hypnagogic hallucinations, 1298
- Hypodivergent faces, 1211
- Hypoglycemia, 59, 60–61, 344
- Hypokalemia, 53
- Hypo-ophthalmos, 479
- Hypopnea, 58
- Hypotension, 70
with tachycardia, 345
- Hypothermia
children, 528
- Hypothyroidism, 34, 62, 74
- Hypovolemia, 338
- Hypovolemic shock
estimated blood loss, 342t
estimated fluid loss, 342t
with multisystem injuries, 341–344
treatment, 343–344
- Hypoxia, 345
- I
- Ibuprofen
for rheumatoid arthritis, 36
- ICP
craniofacial dysostosis syndrome, 901–902
- Ideal face, 1094f
- Idiopathic condylar resorption, 1291f
- Idiopathic hypertrophic subaortic stenosis (IHSS), 69
- Idiopathic vesiculoulcerative disease, 691–692
- IGF-I, 76
- IHSS, 69
- IJD, 967, 967t, 968t
- Iliac corticocancellous graft, 231–232
- Iliac crest
bone grafts, 268f, 789–791, 862–863
corticocancellous block graft augmentation
atrophic mandible, 196f
osteomyocutaneous free flap, 814–815
harvesting, 815f
morbidity following, 815
- Ilizarov, 164
- Illicit drug abusers, 39–40
- Imaging, 568–569
gunshot wounds
neck, 519–520

- panfacial fractures, 550–551
- Imbrication, 1371, 1372f
 - vs. plication, 1372f
- IMF. *See* Internal maxillary fixation (IMF)
- Imipramine
 - end-stage TMJ disease, 1022
- Imiquimod, 698, 708
- Immunocompromised
 - effect on wound healing, 10–11
 - factors associated with, 282t
 - odontogenic infection, 282–283
- Impacted fractures, 410
- Impacted teeth, 139–153
 - age, 144
 - angulation of, 143
 - bone removal, 145
 - children, 144
 - debridement, 146
 - defined, 132
 - depth of impaction, 143
 - etiology, 132–133, 132f
 - evaluation of, 133
 - incidence of, 131–132
 - management of, 131–136
 - multiple, 131f, 132f
 - perioperative care, 143–149
 - relationship to ramus anterior border, 143
 - removal of, 146f
 - age, 142–143
 - antibiotics, 147–149
 - bleeding, 150
 - children, 142–143
 - complications of, 149
 - compromised medical status, 143
 - contraindications for, 142–143
 - for dental caries prevention, 141
 - indications for, 140–142
 - irrigation, 147
 - for odontogenic cyst and tumor prevention, 141
 - orthodontic considerations, 141
 - pain, 142, 150
 - for pericoronitis, 140–141
 - postoperative course, 149–150
 - to prevent jaw fractures, 142
 - root resorption, 142
 - steroids, 149
 - stiffness, 150
 - surgical damage to adjacent structures, 143
 - swelling, 150
 - roots, 144
 - surgery of, 133, 135, 143–149
 - alveolar osteitis, 151
 - complications of, 150
 - determining difficulty of, 143–144
 - fracture, 151
 - irrigation, 151
 - nerve disturbances, 151
 - rare complications, 152
 - technique, 144–147
 - surgical exposure, 133–134
 - vs. unerupted teeth, 140
 - uprighting, 135–136
- Impingement lesions
 - progressive stages, 973t
- Implant driver, 242f
- Implant level transfer impression
 - open-tray technique, 258f
- Implant prosthodontics, 251–271, 254
 - biomechanical considerations, 251–252
 - crown-to-implant ratio, 254–255, 255f
 - full-arch restoration, 255, 255f
 - implant selection, 255–256
 - occlusion, 255
 - patient factors, 251–252
 - periimplant biology, 251
 - radiographic evaluation, 252–253
 - complications of, 269–270
 - abutment fracture, 270
 - porcelain fracture, 270
 - radiographic bone loss, 270
 - resin base fracture, 270
 - screw loosening, 270
 - soft tissue, 269–270
 - contemporary techniques, 266–267
 - immediate load, 267
 - immediate placement, 266
 - immediate restoration, 266–267
 - maxillofacial prostheses, 267–268
 - surgical installation stability, 266
 - edentulous restorations, 263–264
 - FPD, 260–263
 - maintenance of, 270–271
 - single-tooth replacement, 258–260
 - cemented single units, 259–260
 - esthetic zone, 259
 - nonrestorable tooth, 258–259
 - screw-retained single units, 260
 - success criteria, 271
- Implant-retained obturator, 269f
- Implant-retained overdentures, 264
- Implants. *See also* specific implants
 - advances in, 167–171
 - angulation, 200
 - bone healing around, 193
 - depth, 200–201
 - four or more, 195
 - placed too far facially, 260f
 - presurgical planning for placement, 252f
 - soft tissue, 205–221
 - with acellular dermal matrix, 220–221
 - augmentation guidelines, 209
 - epithelialized palatal graft technique, 210–211, 210–211
 - flaps, 205–208, 206f, 207f
 - grafts, 208–209
 - nonsubmerged placement, 206
 - subepithelial connective tissue grafting, 212–215
 - submerged placement, 205–206
 - vascularized interpositional periosteal connective tissue flap, 217–220
 - two, 195
 - without grafting
 - atrophic mandible, 197
- Implant-supported overdentures
 - attachment mechanisms for, 265
- Incisional biopsy, 570, 704
- Incisions. *See also* specific incisions
 - brow lift, 1400f
- Incisors
 - altering axial inclination of, 1122
 - angulation, 1113
 - implant
 - preoperative view of, 213f
 - progressive soft tissue recession, 212f
 - mandibular
 - apical fractures, 390f
 - correct underangulated, 1126
 - crowding of, 141
 - impacted, 132f
 - maxillary
 - altering mesiodistal angulation of, 1122
 - correct underangulated, 1125–1126
 - extraction of, 1122
 - subluxation, 392f
 - position in facial asymmetry, 1212
- Indalones
 - for psychotic disorders, 39
- Indirect bone healing, 6, 373f, 374f
- Indirect fixation, 401
- Indirect fracture, 409f, 410
- Induction agents
 - children, 113–114
- Induction chemotherapy, 639
- Infants, 42
 - seat belts, 529
- Infection
 - cervicofacial liposuction, 1411
 - flaps, 720
 - with impacted teeth removal, 150
 - lip cancer, 659
 - mandibular fracture, 426
 - maxillary fractures, 442

- nasofrontal duct, 503
 - TMJ
 - arthroscopy, 986
 - internal derangement, 1010
 - Infectious endocarditis
 - cardiac conditions associated with, 23t
 - prophylaxis if, 24t
 - Infectious hepatitis, 35
 - Inferior alveolar canal
 - potential tooth proximity to, 820t
 - Inferior alveolar injuries, 820
 - Inferior alveolar nerve
 - anesthesia, 149, 151
 - damage, 1254
 - BSSO, 1157
 - numbness, 405
 - Inferior border augmentation, 182–183
 - Inferior lid
 - cross-section of, 481f
 - Inferiorly based pharyngeal flap, 878
 - Inferior mandibular osteotomy, 1308f
 - Inferior meatus
 - anatomy and physiology of, 297
 - Inferior orbital fissure, 464
 - Inferior orbital rim, 485f
 - Inferior suspensory ligament
 - Lockwood's, 466
 - Inflammation cascade, 951f, 954
 - Inflammatory papillary hyperplasia, 172
 - Inflammatory resorption, 391
 - Infliximab
 - for rheumatoid arthritis, 36
 - Informed consent
 - suction-assisted lipectomy, 1416–1417
 - Infrahyoid muscles, 938
 - Inframandibular muscles, 940, 940f
 - Infraorbital nerve, 437, 445, 464
 - and external nasal branch, 1349
 - and lower eyelid conjunctiva, 1326
 - Infraorbital paresthesia
 - zygomatic arch fractures, 457
 - Infraorbital rim
 - internal fixation of, 456
 - surgery
 - pitfalls in, 453–455
 - Infraorbital space
 - borders of, 278t
 - infection, 279t
 - Infratemporal space
 - infection, 279t
 - Infundibulum
 - anatomy and physiology of, 297
 - Inhalation agents, 96–98, 114t
 - chemical structure of, 96f
 - children, 114–115
 - Inhalational substance abuse
 - anesthesia with, 122
 - Inhalation anesthetics
 - pharmacology of, 93–97
 - properties of, 94t
 - Inhalation induction
 - disadvantages of, 109
 - Injury severity scores, 329–330
 - mortality rates for
 - by age, 330t
 - Inlay bone grafts, 179–180
 - Inoculation, 8
 - Insulin, 60
 - onset, peak and duration, 61t
 - Insulin-like growth factor (IGF-I), 76
 - Intercanthal region, 550
 - Intercartilaginous incision, 1349f
 - rhinoplasty, 1354–1355, 1356f
 - Interdental eyelet wiring, 415
 - Interdental osteotomies, 1130f
 - Interferon
 - nonmelanoma skin cancer, 709
 - Interlabial gap, 1090
 - Intermaxillary fixation, 439f
 - Internal ballistics, 510
 - Internal fixation
 - biomechanic studies vs. clinical outcomes, 374–375
 - selection of, 374
 - zygomatic arch fractures, 455–456
 - Internal inflammatory resorption, 391
 - Internal joint derangement (IJD), 967, 967t, 968t
 - Internal maxillary artery, 1346
 - Internal maxillary fixation (IMF), 402
 - for condylar fractures
 - length of, 415
 - for mandibular fractures
 - length of, 415
 - screws, 415, 416f
 - Internal nasal nerve, 1349
 - Internal neurolysis, 831–832, 832f
 - Internal replacement resorption, 391
 - Internal wire fixation
 - symphysis fracture, 373f
 - Interorbital space, 493
 - Interpolation flaps, 774–775
 - Interpositional grafts, 179, 183
 - anterior maxillary defect, 230f
 - vertical alveolar augmentation, 230
 - Interproximal tooth size reduction, 1121
 - Interrupted strip technique, 1363f
 - Interstitial radiotherapy, 637
 - Intrabony tumors
 - salivary gland, 674
 - Intracartilaginous incision
 - rhinoplasty, 1355
 - Intracerebral hemorrhage, 345f
 - CT, 346f
 - Intracranial hypertension, 887
 - Intracranial pressure (ICP)
 - craniofacial dysostosis syndrome, 901–902
 - Intramuscular sedation, 109
 - Intranasal sedation, 109
 - Intraoperative stereotactic navigation, 308f
 - Intraoral approach
 - to zygomatic arch, 450
 - Intraoral bone grafts, 787–788
 - donor site, 787f
 - Intraoral incisions
 - atrophic mandible, 196
 - Intraoral vertical subcondylar osteotomy (IVSO), 1145, 1250
 - Intraosseous infusions, 108, 108f
 - Intraosteal wiring
 - mandibular fracture, 421
 - Intravenous resuscitation fluid, 342
 - Intravenous tubing
 - maxillary distractors, 1285f
 - Intrinsic jaw-growth deformities, 1207
 - Intrusive luxation, 392
 - Inverted L osteotomy, 1136, 1146–1150
 - extraoral, 1147f, 1148f
 - Ionizing radiation, 699
 - Iontophoresis
 - for TMJ, 956–957
 - Irrigation system
 - TMJ
 - arthroscopy, 968–969
 - Ischemic heart disease, 66–67
 - Isoflurane, 95
 - chemical structure of, 96f
 - pharmacology of, 96–97
 - Isolated mandibular body fracture
 - arch bars and miniplate, 377f
 - Isometric jaw exercise
 - for TMJ, 955
 - Issue ischemia, 10
 - IVSO, 1145, 1250
 - Ivy, Robert, 840
 - Ivy loops, 416f
 - wiring, 415
- J**
- Jacketed bullets, 514
 - Jackson Pratt drain, 285, 286f
 - Jaws
 - aneurysmal bone cyst, 605
 - benign fibro-osseous disease, 597–600
 - benign nonodontogenic lesions, 597–613

- bony reconstruction of, 783–798
 - anatomic considerations, 783–787
 - limitations of, 785
- chondroma, 601
- drug-induced clenching, 1023
- examination of, 404–405
- exercise therapy
 - for TMJ, 955
- fractures of
 - prevention of, 142
- Langerhans cell histiocytosis, 607–608
- lesions with giant cells, 603–605
- neurogenic tumors, 610–611
- nonodontogenic cysts, 608–610
- osteoblastoma, 600
- osteochondroma, 601–602
- osteoid osteoma, 600
- osteoma, 601
- pediatric aggressive mesenchymal tumors, 602
- rotational mechanics, 972f
- synovial chondromatosis, 601–602
- vascular malformations, 605–607
- Jaw thrust procedure, 330, 332f
- Jessner's solution, 1422t, 1423, 1426f, 1427f
- Joe Hall Morris external fixator, 417f
- Johnson, Lanny, 964
- Joint disorders, 36
- Joyce, John, 964
- J-shaped curved hook elevator, 450
- J-shaped elevator, 1438, 1438f
- J stripper, 1188f
- Jug-handle view
 - zygomatic complex fractures, 448
- Juvenile aggressive ossifying fibroma, 600
- Juvenile idiopathic arthritis, 1208
- Juvenile rheumatoid arthritis, 1037
- K
- Kaban protocol, 1038
- Kaminishi, Ronald, 964
- Kaposi's sarcoma, 685
- Karapandzic flap, 366, 663, 664, 664f, 665
- Kartagener's triad, 302
- Kazanjian, V.H., 527
- Kazanjian flap vestibuloplasty, 178f
- Kelly clamp
 - for pneumothorax, 333
- Keloids, 9
 - protruding ear, 1458
- Keratinized gingiva, 192
- Keratitis sicca, 1330f
- Ketamine, 110–112
 - avoiding in malignant hyperthermia, 38
 - cardiovascular effect, 111
- chemical structure of, 93f
- children, 111
- disadvantages of, 111
- pharmacology of, 92–93
- Ketorolac
 - end-stage TMJ disease, 1017
 - pharmacology of, 97
- KGF-2, 13
- Ki-67, 653
- Kidneys
 - age-related changes, 41
 - disease, 30–31
 - assessment of, 77–78
 - caused by hypertension, 32
 - chronic
 - immunocompromised, 283
 - end-stage, 31, 77
 - insufficiency, 54
 - chronic, 30–31
 - normal architecture of, 55f
- Kiesselbach's plexus, 1347
- Killian incision
 - rhinoplasty, 1354
- Kitayama technique, 423f
- Klearway titratable appliance, 1303, 1304f
- Klebsiella*, 300
- Klebsiella pneumoniae*, 287
- Kleeblattschadel anomaly, 925–926, 926f
- Klein's tumescent technique, 1409
- Klippel-Feil, 74
- Knife-edge ridges, 1292
 - differential osteotomy, 1294f
- Kobert technique, 422f
- Kole's subapical osteotomy, 1138f
- Kolle, Frederick, 1317
- Kussmaul's sign, 338
- L
- Labetalol
 - for hypertension, 32
 - for hypertensive crisis, 50t
- Labial frenectomy, 172–174
- Labial mucosal advancement flaps, 662
- Labial pedicle
 - for anterior maxillary osteotomy, 1195f, 1196f
- Labial splint, 416
- Labial structures
 - maxillary surgical procedures, 1225, 1225f
- Labii superioris, 445
- Labiomental sulcus, 1229
- Lacerations, 360–361, 437
 - under chin, 405
 - closure of, 362f
 - and facial injuries, 397
- glabella, 494
 - maxillary fractures, 442
- Lacrimal apparatus, 465, 493–494
- Lacrimal glands, 364, 1326
 - prolapse, 1332
- Lacrimal injuries, 475
- Lacrimal probe, 365f
- Lacrimal sac, 484
 - incision of, 504f
- Lacrimal secretion, 1330
- Lacrimal system, 466, 1326, 1326f
- Lactating mothers, 42
 - medications for, 42t
- Lag screws, 372f, 375, 379f, 1154
 - vs. bone plates, 379
 - fixation technique, 379, 401
 - placement of, 380f
- Lambdoid synostosis
 - unilateral, 890
- Lamellar bone, 193
- Lamotrigine
 - for seizure disorders, 37
- LAN. *See* Lingual nerve (LAN)
- Lane's osteotomy, 1137f
- Langerhans cell, 709
 - histiocytosis, 607–608
- Lanz, Otto, 435
- Lap belts, 529
- Laryngoscope, 624
- Laryngoscopy
 - fiberoptic
 - children, 528
- Laryngospasm
 - children, 115–116
- Laser ablation, 641
 - leukoplakia, 632
- Laser-assisted uvulopalatoplasty
 - OSA, 1306–1307
- Laser Doppler flowmetry (LDF), 386
- Lasers
 - skin resurfacing, 1342
 - TMJ arthroscopy, 970–971
 - vestibuloplasty, 175
- Lateral brow incision, 452, 482
- Lateral canthal ligament, 1321–1322
- Lateral canthotomy, 453
- Lateral capsular prolapse, 973
- Lateral cartilage
 - lower
 - anatomy of, 1349f
- Lateral cephalometric radiographs
 - facial asymmetry, 1209
- Lateral crural steal, 1360f
- Lateral dislocation, 411
- Lateral luxation, 392

- Lateral maxillary osteotomy, 1273f
- Lateral pharyngeal space
 - borders of, 278t
 - infection, 279t
- Lateral pterygoid muscle, 784
- Lateral tarsal strip procedure, 1335
- Lateral temporomandibular ligaments, 936
- Lateral tuberculectomy, 1003f
- Latissimus dorsi myocutaneous flaps, 780
- LDE, 386
- Lebanon
 - gold wire splinting, 383f
- LeClerc procedure, 1046f
- Leeches
 - medicinal, 780
- Le Fort, René, 435, 527, 1179
- Le Fort classification system
 - maxillary fractures, 435–436, 435f
- Le Fort fractures, 405f
 - bone plates, 375f
 - children, 534
 - hemorrhage, 438
 - orbital fractures with, 477
- Le Fort III osteotomy, 527
- Le Fort I maxillary osteotomy
 - delayed hemorrhage, 1248
- Le Fort I island
 - maxillary tumor, 645f
- Left medial canthus
 - reattachment, 477f
- Left ventricular dysfunction, 22–23
- Lens
 - discoloration, 473
- Lentigo maligna, 703f
- Lentigo maligna melanoma, 684, 703
- Lentigo simplex, 683
- Leukocytes, 4, 6, 8
- Leukoplakia, 618f, 619, 632–633
 - proliferative verrucous variant
 - gingiva, 618f
 - transformation to squamous cell carcinoma, 632
 - treatment
 - Cochrane review, 632
 - ventral tongue, 632f
- Leukotrienes
 - end-stage TMJ disease, 1019
- Levator aponeurosis
 - cross-sectional view of, 1320f
- Levator palpebrae superioris muscle, 466, 1323, 1325, 1328
- Levofloxacin
 - for rhinosinusitis, 502
- Lichen planus, 692–693, 692f, 693f
- Lidocaine, 359
 - for blepharoplasty, 1331
 - reduction in liver disease, 35
- Lid retractor, 468
- Lifting, 710
- Ligaments
 - TMJ, 936–937
- Limberg flaps, 773
- Lincomycin
 - for alveolar osteitis, 151
- Linear fracture
 - load-sharing fixation, 375
 - orbital, 484
- Linear tomography, 254f
 - implants, 253
- Lingual frenectomy, 174
- Lingual frenum attachment, 174f
- Lingual nerve (LAN), 821
 - blocks
 - for genial tubercle reduction, 169
 - for mylohyoid ridge reduction, 171
 - exposure technique, 831f
 - injuries, 820, 822, 1254
- Lingual splint, 416, 416f, 1259f
- Lipexeresis, 1407
- Liposculpting, 1407–1418
- Liposuction. *See also* Cervicofacial liposuction
 - as adjunctive procedure, 1411–1412
 - facial
 - postoperative instructions, 1418
 - syringe system, 1409f
- Liposuction-assisted rhytidectomy, 1412, 1413f
- Lipping, 974, 977f
- Lips
 - avulsive injuries, 369f
 - cancer, 659–667, 662–663
 - anatomic considerations, 659–660
 - cervical lymphadenectomy, 666
 - cervical metastasis from, 660
 - epidemiology, 659–660
 - etiology, 659–660
 - neglected, 620f
 - oral, 641–645
 - staging, 661t
 - surgery, 661–662
 - treatment, 660–661
 - results, 666–667
 - tumor node metastasis system, 661t
 - excision, 662, 662f
 - injuries, 366
 - lower
 - actinic cheilitis, 618f
 - changes with orthodontic incisor retraction, 1224
 - lymphatic drainage, 660
 - metastasis from, 660
 - squamous cell carcinoma, 661f, 663f
 - ultraviolet lip, 618
 - W excision, 662, 662f
 - mucosa, 175f
 - squamous cell carcinoma, 641–645, 642f
 - vermillion injuries, 360
- Lip shave, 641, 662
- Lip-splitting approach
 - incision for, 646f
- Lipswitch flap, 775
- Lipswitch vestibuloplasty, 175, 194
- Lip-tooth-gingival relationship
 - direct measurement of, 1091f
- Lispro
 - onset, peak and duration, 61t
- Lithium carbonate
 - for affective disorders, 39
 - for bipolar disorders, 39
- Lithotripsy
 - for parotid gland sialoliths, 676
- Little's area, 1347
- Liver disease, 34–35
 - assessment of, 77
- L-lactic acid resorbable plating system, 441–442
- Load-bearing fixation
 - bone plate, 375f
 - vs. load-sharing fixation, 375–376
- Load-sharing fixation
 - vs. load-bearing fixation, 375–376
- Local anesthetics
 - TMJ, 953
- Local flaps, 769–781, 772–776
- Localized pigmented lesions, 682–685
- Locking plate-screw systems, 378–379, 379f
- Lockwood's ligament, 446, 466, 1322
- Long dolichocephalic faces, 159
- Long drills, 242
- Long-term endosseous implant
 - first, 189
- Loracarbef
 - for rhinosinusitis, 502
- Lorazepam
 - chemical structure of, 86f
 - for delirium tremens, 39, 635
 - pharmacology of, 87
- L osteotomy, 1137f, 1294f
 - inverted, 1136, 1146–1150, 1147f, 1148f
 - reverse, 1290f
- Lower eyelids
 - blepharoplasty, 1334–1337
 - complications of, 1340–1341
 - ectropion, 1341
 - fat removal, 1341
 - lateral canthopexy, 1337
 - midfacial rejuvenation, 1337

- retraction, 1340–1341
 - skin pinch excision, 1337
 - transconjunctival approach, 1335–1336, 1338f
 - transcutaneous approach, 1335, 1336f
- crease, 1320
- examination of, 1329
- fat pads, 1324
- retractors, 1323
- LSD
 - anesthesia with, 122
- L-shaped incision, 996
- Ludwig's angina, 284
- Luhr, Hans, 527
- Lumbar puncture, 347
- Lunchtime peels, 1423
- Lungs
 - age-related changes, 41
 - assessment of, 28
 - volume, 59f
- Lupus anticoagulant, 37
- Lupus erythematosus, 691
- Luxation injury
 - permanent dentition malformation, 399f
- Lymphocytes, 11
- Lyons, Chalmers, 840
- Lyophilized dura, 1008
- Lysergic acid diethylamide (LSD)
 - anesthesia with, 122
- M
- Macroesthetic examination
 - oblique view, 1100
 - profile view, 1101
- Macroglossia, 1117f
- Macrolides
 - for rhinosinusitis, 305
- Macrophages, 4, 6, 193
- Macular lesions, 565, 566f
- Magnetic resonance imaging (MRI), 569
 - closed lock phenomenon, 990
 - dislocated disk, 991f
 - oral cancer, 625
 - orbital fractures, 470
 - osteomyelitis, 315
 - TMJ, 975, 976f
 - tongue, 643f
- Major Trauma Outcome Study, 329
- Malignancy
 - HIV, 689
 - masquerading as osteomyelitis, 320f
- Malignant epithelial odontogenic ghost cell tumor, 589
- Malignant hyperthermia, 37–38, 62–63, 95
- Mallampati classification, 74, 76f
- Mallampati test, 281–282
- Malnutrition
 - immunocompromised, 283
- Malocclusion, 405
- Malunion
 - mandibular fracture, 426
 - maxillary fractures, 442
 - zygomatic arch fractures, 457
- Mandible. *See also* Atrophic mandible; Edentulous mandible
 - ablative defect
 - delayed reconstruction of, 796, 797f
 - advancement, 1251f
 - OSA, 1307
 - posterior airway, 1301f
 - sagittal split osteotomy, 1283f
 - soft tissue changes associated with, 1230t
 - alveolus, 784
 - anatomy of, 934
 - angle
 - functional forces acting across, 376f
 - inferior border augmentation, 1437–1439, 1440f
 - anterior
 - FPD, 262
 - anterior segmental osteotomy
 - soft tissue changes associated with, 1229t
 - anterior teeth
 - anterior osteotomies, 1124
 - bilateral mandibular body osteotomies, 1124
 - crowded, 1123–1125
 - distalize posterior teeth, 1124
 - extraction and retraction, 1124
 - slenderizing and retraction, 1124
 - atrophy of, 158f
 - augmentation of, 181–183
 - autorotation
 - soft tissue changes associated with, 1231t
 - bicuspid
 - impacted, 136
 - progressive soft tissue recession, 212f
 - bimanual manipulation, 1045f
 - block autografts, 223–224, 228
 - body of, 784
 - bone
 - formation n, 192–193
 - loss, 162
 - buttress, 548
 - children, 529
 - comminuted fractures
 - fixation, 375
 - condyle, 934f
 - condyle fractures
 - children, 538–539
 - contour irregularities, 162f
 - defects, 785
 - maxillofacial prostheses, 267–268
 - deformation, 1205
 - delayed union, 1251
 - development of, 1062–1063, 1062f
 - distraction, 1279–1280
 - fibroma, 313f
 - FPD, 268f
 - fracture, 149, 152, 549
 - anatomic location, 409
 - binding teeth together, 383
 - biomechanical considerations, 402–404
 - children, 424–425, 538–542
 - classification of, 407–412
 - clinical examination, 405–406
 - complex facial fractures, 418
 - complications, 425–429
 - concurrent condylar fracture, 418
 - delay in treating, 418
 - dentures, 406f
 - edentulous sites, 423–425, 424f
 - evaluation of, 404–407
 - gunshot wounds, 517f
 - intermaxillary techniques, 415–417
 - intraoral examination, 406
 - intraosteal wiring, 421
 - medically compromised patients, 418
 - nonreduced, 549f
 - one-point vs. two-point fixation, 377
 - open reduction, 417–418
 - pattern of, 409–410
 - penicillin, 425
 - postoperative management, 429–430
 - radiographic evaluation, 406–407, 407f
 - right angle and left body, 381f
 - rigid fixation for, 372f, 423
 - single vs. multiple, 380–381
 - sinus tract, 426f
 - site distribution, 413f
 - teeth in line of fracture, 425
 - treatment, 401–430
 - goals, 413–414
 - types of, 409f
 - unfavorable or unstable fracture, 417–418
 - gunshot wounds, 795f
 - fragmentation, 520f
 - hemorrhage, 1249
 - hybrid denture, 265f
 - hypoplasia
 - condylar fractures, 427f
 - implants, 263f
 - incisors
 - apical fractures, 390f

- correct underangulated, 1126
- crowding of, 141
- impacted, 132f
- with insufficient supracanal height, 268f
- large traumatic defect
 - reconstruction of, 795–796
- manipulation
 - for TMJ, 955, 955t
- molars
 - lack of eruption, 131
- muscular attachments, 162f
- nonunion, 1251
- occlusal view, 407
- oral cancer, 645–646
- orthognathic surgery
 - anatomic and physiologic considerations, 1138–1141
 - historical development of, 1135–1138
 - muscles, 1140–1141
 - nerves, 1139–1140
 - osteotomy techniques, 1141–1173
 - principles of, 1135–1173
 - vascular supply, 1138–1139
- osteotomy fractures
 - lingual segment fracture, 1258–1259
 - proximal segment, mandible intact, 1257
 - proximal segment split complete, 1257–1258
 - unanticipated, 1257–1259
- palpation of, 405f
- posterior
 - FPD, 262–263
- ramus
 - position in facial asymmetry, 1213
 - radiolucency, 577f
- reconstruction of, 794–795
- regions, 783, 784f
- relapse of, 1262
- ridge extension procedures, 174–175
- second molars
 - impacted
 - repositioning of, 135
- sensory injuries in, 1253–1254
- setback
 - OSA, 1310–1311
 - soft tissue changes associated with, 1231t
- subapical osteotomy
 - Hullihen's, 1135, 1135f
- subcondyle fractures
 - children, 538–539
- surgery
 - anterior repositioning, 1226–1227
 - anterior segmental posterior repositioning, 1226
 - autorotation, 1228
 - poor esthetic results, 1241
 - posterior repositioning, 1227–1228
 - soft tissue changes associated with, 1226–1228
- swelling, 317f
- symphysis distraction osteogenesis, 1124–1125, 1125f
- teeth
 - eruption of, 1063
- third molars
 - development of, 139–140
 - impacted, 131
 - partial eruption, 140
- titanium reconstruction plate, 796f
- tori, 172f
 - removal of, 170–171
- vascularized fibular graft to implants, 268f
- vestibular incision, 551
- vestibuloplasty, 175
- widening
 - with angle fracture, 381f
 - with distraction osteogenesis, 1280–1281
 - with symphysis fracture, 382f
- Mandibulectomy, 644, 646, 646f
- Mandrel and cover screw drivers, 242f
- Manic-depressive disorders, 39
- MAOI
 - for affective disorders, 39
 - for TMJ, 952–953
- Marginal incision
 - rhinoplasty, 1356f
- Margin reflex distance, 1328f, 1329
- Marijuana
 - anesthesia with, 122
- Marsupialization
 - for dentigerous cyst, 577, 578f
- Mask-induction techniques, 115
- Masseter muscle, 445, 938, 939f
- MAST, 339
- Masticatory myalgia, 940–941
- Masticatory space, 278
- Matrix metalloproteinases (MMP), 6
- Maxilla, 784–785
 - advancement
 - posterior airway, 1301f
 - soft tissue changes associated with, 1227t
 - anatomy of, 437f
 - anterior segmentalization of, 1179
 - anterior teeth
 - extraction, 1122–1123
 - missing, 261f
 - overangulated or crowded, 1122–1123
 - retraction, 1122
 - slenderizing, 1122
 - antroostomy, 307–308
 - arch, 1126–1127
 - width of, 1114t, 1130–1131
 - augmentation, 175–180
 - bicuspid
 - impacted, 131, 136
 - bone loss, 162
 - buttress, 548
 - canine teeth
 - impacted, 131, 132
 - panoramic films, 133, 133f
 - unerupted, 134f
 - cranial onlay bone graft, 263f
 - cross-section, 1183f
 - defects, 237–238, 785
 - maxillofacial prostheses, 268
 - delayed union, 1250–1251
 - distraction, 1282–1284
 - maxillary hypoplasia, 1286f
 - distractors
 - intravenous tubing, 1285f
 - four implants, 198
 - fractures
 - anatomy, 436–437
 - avulsive injuries, 441
 - children, 441
 - clinical examination, 437–438
 - complications, 439, 441–442, 442t
 - computed tomography, 439f
 - diagnosis, 437–438
 - elderly, 441
 - examination, 438f
 - history, 435
 - imaging, 438
 - Le Fort classification system, 435–436, 435f
 - rigid internal fixation, 439
 - surgical splints, 440–441
 - treatment, 435–442, 438–439
 - unanticipated, 1261
 - Water's radiography, 438f
 - hemorrhage, 1247–1249
 - horizontal measurements of, 160f
 - hypoplasia
 - maxillary distraction, 1286f
 - impaction
 - soft tissue changes associated with, 1228t
 - impaction osteotomy
 - septal reduction during, 1242f
 - incisors
 - altering mesiodistal angulation of, 1122
 - correct underangulated, 1125–1126
 - extraction of, 1122
 - subluxation, 392f
 - inferiorly positioned, 1251f

- interpositional iliac crest grafts, 181f
- mesiodistal teeth diameter, 1112t
- model, 1182f
- molars
 - impacted, 132f
- multiple implant-borne restorations, 199–200
- nonunion, 1250–1251
- orthognathic surgery, 1179–1201
 - anterior repositioning, 1192
 - historical development of, 1179
 - inferior repositioning, 1192
 - intraoperative positioning, 1180–1181
 - models marked for, 1181f
 - osseous structures, 1181–1183
 - posterior repositioning, 1192–1193
 - reference marks for, 1180–1181
 - soft tissue envelope, 1184–1185
 - superior repositioning, 1192
 - surgical anatomy, 1181–1185
 - surgical techniques, 1185–1193
 - vascular structures, 1183–1184
- orthopedic expansion appliances, 1071f
- osteoradionecrosis, 322f
- osteotomy
 - anterior nasal spine reduction, 1241f
 - first American report of, 1179
 - lateral, 1273f
 - stable fixation for, 1193
- palatal cuspid
 - impacted, 134
- paresthesia, 1253
- posterior segmentalization of, 1179
- premolar replacement, 199f
- reconstruction of, 795–798, 798f
 - case studies, 795–798
- regions, 784f
- ridge extension procedures, 174–175
- segmental distraction, 1284–1286
- sensory injury in, 1253
- setback
 - soft tissue changes associated with, 1228t
- severe atrophy, 237f
- single-unit restorations, 200
- sinus, 464, 1181
 - CT, 163f
 - fungal balls, 303f
 - Water's radiography, 470f
- sinusitis, 299
- submucosal vestibuloplasty, 176f
- surgery, 1185–1190
 - anterior repositioning, 1226
 - anterior segmental repositioning, 1225
 - inferior repositioning, 1226
 - labial structures, 1225, 1225f
 - multidirectional maxillary movements, 1226
 - nasal structures, 1224–1225, 1225f, 1225t
 - poor esthetic results with, 1234, 1235f
 - posterior repositioning, 1226
 - postoperative hemorrhage, 1248
 - soft tissue, 1224–1229, 1234
 - superior repositioning, 1226
- teeth
 - bone removal, 145
 - eruption of, 1063
 - extraction, 201t
- third molars
 - impacted, 131
 - delivery of, 149f
- tori, 171f
 - removal of, 170–171
- transverse tilting of, 1099f
- tuberosities, 1062, 1183
- tumor
 - Le Fort I island, 645f
- vestibular incision, 551
- vestibuloplasty, 175
- Maxillary-nasal base esthetic unit
 - craniofacial dysostosis syndrome, 904
- Maxillectomy, 254f
- Maxillofacial area
 - in trauma patient, 349
- Maxillofacial examination
 - dentoalveolar injuries, 384–386
- Maxillofacial imaging
 - osteomyelitis, 315
- Maxillofacial injuries, 349
- Maxillofacial prostheses, 267–268
 - craniofacial defects, 268–269
 - mandible defects, 267–268
 - maxillary defects, 268
 - radiotherapy, 269
- Maxillomandibular advancement
 - OSA, 1308–1310, 1311t
- Maxillomandibular complex
 - manual positioning of, 1188f
- Maxillomandibular discontinuities, 239f
- Maxillomandibular fixation
 - skeletal fixation, 1141f
- Maxillomandibular fixation (MMF), 371, 1281–1282
- McCain, Joseph, 964
- McGill Pain Questionnaire (MPQ), 825
- MDMA
 - anesthesia with, 121–122
- Measles, 688–689
- Meatus
 - narrowed, 1458
- MEC, 672
- Mechanical creep, 712
- Mechanical stimulation, 386
- Medial canthal ligament, 1321–1322
- Medial canthal tendon, 465, 484, 493
 - instability, 496
- Medial canthus
 - left
 - reattachment, 477f
- Medial lid lacerations, 477f
- Medial zygomaticotemporal vein, 1389
- Median mandibular cyst, 608
- Median rhomboid glossitis, 680–681, 681f
- Medically compromised patients
 - mandibular fracture
 - open reduction, 418
- Medications
 - to avoid during pregnancy, 42t
 - for breast-feeding mothers, 42t
 - determining preoperative risk, 17–18
 - history
 - blepharoplasty, 1327–1328
- Medicinal leeches, 780
- Meglumine diatrizoate, 518
- Meissner's corpuscles, 709
- Melanin pigmentation
 - smoking
 - gingiva, 682
- Melanocytes, 709
- Melanocytic lesions, 683
- Melanoma in situ, 703
- Melanomas, 683–684, 684f, 701–714
 - acral-lentiginous, 684, 703
 - biopsy, 704t
 - description, 702–704
 - lentigo maligna, 684
 - nodular, 684, 703
 - risk factors, 701–702
 - superficial spreading, 684
 - survival rates, 704t
- Membrane-placement instrument, 213, 215
- Membranous bone
 - formation of, 192–193
- Meningitis, 500
- Mental foramina
 - radiography, 253f
- Mental status
 - of trauma patient, 338
- Menton
 - osseous deposition at, 1232f
- Meperidine
 - chemical structure of, 88f
 - in elderly, 41
 - overdose of, 344
 - pharmacology of, 88

- reduction in liver disease, 35
- Merkel cell, 709
 - tumor, 697
- Merocel packing, 438
- Mesenchyme, 583
- Mesioangular impaction, 143, 147f
 - bone removal, 145
- Mesocephalic facial type, 1094f
- Messer technique, 422f
- MET, 48, 70
 - for common activities, 48t
- Metabolic acidosis, 53, 77
- Metabolic equivalents (MET), 48, 70
 - for common activities, 48t
- Metered-dose inhalers
 - for asthma, 29
- Methadone, 39
- Methohexital
 - chemical structure of, 90f
 - children, 113
 - pharmacology of, 91
- Methotrexate, 639
 - for rheumatoid arthritis, 36
- Methyldopa, 691
- Methylene blue dye, 499
- 3,4-methylenedioxymethamphetamine (MDMA)
 - anesthesia with, 121–122
- Methylprednisolone, 473
 - impacted teeth removal, 149
 - for sinus infection, 305
- Metoclopramide, 106
- Metopic synostosis, 889–890
- Metronidazole
 - for odontogenic infection, 289
- Microdermabrasion, 1429, 1429f
- Microesthetic examination, 1107
- Micrognathia, 1280
- Microhyphemas, 473
- Microliths, 674
- Microneurosurgery, 819–834
 - demographics, 819–820
 - exposure, 830
 - medicolegal issues, 834
 - postsurgical management, 834
 - referral indications, 828t
 - treatment algorithms, 828–830
- Micropigmentation, 1401–1402
- Microsomia, 1282f
- Microvascular anastomosis, 803–804
- Microvascular flaps, 320
- Microvascular free flaps, 792
- Microvascular free tissue transfer, 803–816
- Midazolam
 - chemical structure of, 86f
- children, 112–113
 - with ketamine, 111
 - pharmacology of, 87
- Middle meatus
 - anatomy and physiology of, 297
 - discharge from, 302f
 - polyp of, 302f
- Midface
 - advancement surgery
 - timing of, 1269–1270
 - anatomy, 1318–1319
 - architecture, 1329–1330
 - for macroesthetic examination, 1100
 - superficial fascia, 1184
- Midforehead lift, 1400
- Midline palatal incision, 1198f
 - total maxillary alveolar osteotomy, 1191f
- Midline ridging, 890f
- Midsagittal osteotomy of inferior fragment, 1168
- Midsymphyseal osteotomy, 1155
- Midsymphysis
 - fracture
 - with condylar process fracture, 381
 - measurement of, 1099f
- Military antishock trousers (MAST), 339
- Millard, Ralph, 840
- Milled-bar attachments, 265
- Miller, Charles Conrad, 1317
- Minié ball, 513f, 514
- Miniplates, 373f, 380f, 402, 549f
 - isolated mandibular body fracture, 377f
- Minocycline, 682
- Minorities
 - maxillofacial trauma, 384
- Minor salivary glands
 - tumors, 673–674
- Missing teeth, 1131
- Mitral insufficiency, 69
- Mitral regurgitation, 24
- Mitral stenosis, 23–24, 68–69
- Mitral valve prolapse, 24–25, 69
- Mivacurium
 - pharmacology of, 98
 - properties, 99t
- Mixed sleep apnea, 1298
- MMF, 371, 1281–1282
- MMP, 6
- Mobitz type I (Wenckebach), 28
- Möbius sequence, 104
- Modified Cawood and Howell classification of resorption, 161f
- Modified channel retractor, 226
- Modified Le Fort osteotomies, 1201–1202, 1201f
- Modified radical neck dissection, 648
- Modiolus, 1184
- Mohs' micrographic surgery
 - nonmelanoma skin cancer, 705–708
- Molars
 - impacted
 - neoplastic change around, 141
 - mandibular
 - lack of eruption, 131
 - restoration, 199
- Monheit-Fulton index of photoaging skin, 1421t
- Monoamine oxidase inhibitors (MAOI)
 - for affective disorders, 39
 - for TMJ, 952–953
- Monocortical miniplate osteosynthesis, 423
- Monocortical plate, 1262f
- Monostotic fibrous dysplasia, 597
- Moraxella catarrhalis*, 300
- Morbid obesity, 58
- Morphine
 - in elderly, 41
 - end-stage TMJ disease, 1017, 1021
 - pharmacology of, 88
 - reduction in liver disease, 35
- Morse taper, 256
 - internal connection, 257f
- Moses, Jeffrey, 964
- Moses' release elevator, 971f
- Motor function
 - in trauma patient, 346
- Mouth
 - gunshot wound, 521f
- Moxifloxacin
 - for odontogenic infection, 289
- MPD, 941
- MRI, 569. *See also* Magnetic resonance imaging (MRI)
- Mucocoeles, 503, 676–677
- Mucoepidermoid carcinoma (MEC), 672
- Mucolytics, 502
- Mucoperichondrium
 - elevation of, 1357f
- Mucoperiosteal flap, 144
- Mucosa. *See also* Oral mucosa
 - advancement flaps
 - labial, 662
 - flaps
 - buccal, 1270f
 - cross-lip, 662, 665f
 - lip cancer, 620–621
 - membrane pemphigoid
 - benign, 690–691
 - substitutes
 - wound healing, 13–14
- Muller's muscle, 466, 1323

- Multiple trauma algorithm, 331f
 Murakami, Ken-Ischiro, 964
 Murmurs, 107
 Muscarinic receptor antagonists
 children, 117
 Muscle injections
 for TMJ, 957
 Muscle relaxants, 954t
 TMJ, 953
 Muscular dystrophy
 anesthesia with, 120
 Musculoaponeurotic system incision, 1376f
 Musculocutaneous arteries, 710
 Mustarde technique, 1453f, 1454–1456, 1456f
 Muzzleloaders, 513
 Myelin sheaths, 824
 Mylohyoid attachment, 175
 Mylohyoid ridge reduction, 171
 Myocardial infarction, 49–50
 general anesthesia risk after, 20
 Myocardial ischemia, 18, 19, 48–49
 Myocutaneous flaps, 770f
 latissimus dorsi, 780
 pectoralis major, 777–778
 trapezium, 779–780
 Myofascial pain and dysfunction (MPD), 941
 Myositis ossificans progressiva, 941, 1035f
 Myotonic dystrophy, 941
- N
 Nalbuphine
 pharmacology of, 89
 Naloxone
 pharmacology of, 89
 Narcolepsy, 1298, 1299
 Narcotics
 avoidance in COPD, 30
 Nasal cavity
 lateral wall of, 340f
 packing of, 340, 340f
 Nasal dorsum, 1352f, 1358–1359
 augmentation, 1358–1359
 reduction, 1358
 rhinoplasty, 1352, 1353
 Nasal septum, 437
 abnormalities of, 298
 alterations in, 1255
 anatomy of, 437f, 1349f
 anterior aspect of, 1189f
 arteries, 1348f
 cartilage resection, 1357f
 hematomas, 364
 repositioning, 1357f
 sensory nerves, 1351f
 suturing to anterior nasal spine, 1190f
- Nasal tip
 defect, 366f
 definition, 1352f
 rhinoplasty, 1352
 projection
 rhinoplasty, 1352–1353
 rhinoplasty, 1359–1363
 rotation
 rhinoplasty, 1353
 Nasal valve, 1350
 alterations in, 1256
 Nasal wall
 anatomy and physiology of, 297, 297f
 Nasoantral window, 298
 Nasociliary nerve, 1325
 Nasofrontal angle
 rhinoplasty, 1351–1352
 Nasofrontal duct, 497f
 evaluation of, 499f
 identifying, 499f
 intraoperative evaluation of, 498–499
 obstruction, 500–501
 patency, 496
 Nasofrontal suture line, 1385
 Nasolabial cysts, 608, 609f
 Nasolabial flap, 774–775, 776f
 Nasolacrimal apparatus
 soft tissue injuries, 364–365
 Nasolacrimal duct
 ostium, 437
 Nasolacrimal system
 anatomy of, 365f
 Nasomaxilla
 development of, 1060–1061
 intramembranous growth, 1061f
 malformations, 1065–1066
 Naso-orbitoethmoid (NOE) fractures,
 467, 488, 495f
 children, 532–534
 classification, 496, 498f
 imaging, 496
 osseous recovery, 498
 reconstruction, 501–502
 Nasopalatine duct cyst, 608–609, 609f
 Nasopharyngeal carcinoma, 1036f
 Nasotracheal intubation, 439
 Nausea, 1299
 Neck. *See also* Head and neck
 dissection
 in-continuity vs. discontinuity, 650
 examination of, 357
 gunshot wounds, 517–519
 decision tree, 519f
 surgery, 520–522
 injuries, 366–367
 inspection of in trauma patient, 349
 levels, 667f
 lymph node levels of, 619f
 oral cavity
 squamous cell carcinoma, 648f
 palpation of, 625
 in trauma patient, 349
 Necrotizing fasciitis, 281, 281f
 Necrotizing ulcerative gingivitis, 681
 Needle decompression, 284
Neisseria gonorrhoeae, 682
 TMJ, 944
 Neoadjuvant chemotherapy, 639
 Neocondyle
 transport distraction osteogenesis, 1289–1290
 Neonate
 cranial base, 1061f
 skull
 fontanelles, 1060f
 sutures, 1060f
 Neonates, 42
 Neophyte clinician
 vs. expert clinician
 case study, 567–568
 Neovascularization, 8
 Nephrosclerosis, 32
 Nerve growth factor (NGF), 13
 Nerves
 damage
 BSSO, 1156–1158
 grafts, 833
 donor size, 833t
 injuries, 1253–1255
 classification of, 824–825, 824f
 Seddon vs. Sunderland, 825t
 mandibular fracture, 426–427
 peripheral, 827–828, 828t
 layer formation, 1051–1052
 stump preparation, 832, 832f
 treatment algorithms, 829f
 wound healing, 6
 Neural complications
 horizontal ramus osteotomies, 1164
 Neural crest migration, 1053f
 Neural damage
 VSO, 1146
 Neural fascicular patterns, 822, 823f
 Neural innervation
 children, 105
 Neural wound healing, 823f
 Neurocranium
 formation of, 1055
 Neurofibroma, 610–611, 610f
 Neurofibromatosis, 682
 Neuroleptic malignant syndrome (NMS), 63

- Neurologic disorders
 - assessment of, 78–79
 - cerebrovascular disease, 37
 - epilepsy, 78
 - malignant hyperthermia, 37–38
 - spinal cord disorders, 38
 - stroke, 37, 78
 - caused by hypertension, 32, 79
 - TIA, 37, 78–79
- Neuroma, 6, 611f
 - traumatic, 611
 - types of, 824f
- Neuromuscular-blocking medications
 - pharmacology of, 97
 - properties, 99t
- Neuromuscular disorders, 37–38
 - assessment of, 78–79
 - seizure disorders, 37
- Neuropeptides, 300
- Neuropraxia, 6
- Neuropsychiatric disorders, 888
- Neurorrhaphy, 833, 833f
- Neurotmesis, 6
- Neutrophils, 4, 193
- Nevi, 683
- Nevoid basal cell carcinoma syndrome, 580–581, 580f
- Nevus sebaceus of Jadassohn, 698, 699f
- Newborns. *See* Neonates
- New York Heart Association cardiac patient
 - classification, 67–68, 67t
- NGF, 13
- Nicardipine
 - for hypertension, 32
 - for hypertensive crisis, 50t
- Nicotine
 - effect on cardiovascular system, 57
- Nikolsky's sign, 690
- Nitroglycerin, 67
- Nitroprusside
 - for hypertensive crisis, 50t
- Nitrous oxide
 - avoidance in COPD, 30
 - chemical structure of, 96f
 - children, 114
 - pharmacology of, 93, 95–96
 - properties of, 94t
- NLP, 472
- NMS, 63
- Nobecutane spray, 718
- Nobel Biocare implants, 243
- Nocturnal myoclonus
 - sleep-related, 1298
- Nodes of Ranvier, 823
- Nodular melanomas, 684, 703
- NOE. *See* Naso-orbitoethmoid (NOE) fractures
- Noel, Suzanne, 1317
- No light perception (NLP), 472
- Noncompetitive antagonists, 84
- Noncompression plate osteosynthesis
 - vs. compression plate osteosynthesis, 378
- Nondepolarizing agents
 - pharmacology of, 98
- Nondilated cardiomyopathy, 69
- Non-Hodgkin's lymphoma, 689–690
- Nonischemic heart disease, 68–69
- Nonmelanoma skin cancer, 697–700
 - applied skin anatomy, 709–710
 - chemotherapy, 708
 - cryosurgery, 708
 - curettage, 708
 - electrodesiccation, 708
 - epidemiology, 697
 - etiology, 697–698
 - excision, 705
 - flaps, 710–711
 - interferon, 709
 - lasers, 708–709
 - Mohs' micrographic surgery, 705–708
 - photodynamic therapy, 709
 - prevention, 699–700
 - radiation therapy, 708
 - retinoids, 709
 - treatment, 704–705
- Nonopioid analgesics
 - end-stage TMJ disease, 1018–1019
- Nonrestorable tooth
 - orthodontic extrusion of, 266f
 - replaced with immediate implant, 267f
- Nonrigid internal fixation, 371–373
 - vs. rigid internal fixation, 371–382
- Nonsteroidal anti-inflammatory drugs (NSAID), 641, 952t
 - avoidance
 - in liver disease, 35
 - in renal patients, 31
 - ideal properties, 952t
 - inhibiting platelet function, 78
 - periarticular ectopic bone formation, 1027
 - for rheumatoid arthritis, 36
 - for TMJ, 951
- Nonsyndromic craniosynostosis, 887–899
 - bilateral coronal synostosis, 892–895, 895f
 - classification, 888–889
 - diagnosis, 888
 - functional considerations, 887–888
 - management, 891–899
 - metopic synostosis, 896f–897f
 - sagittal synostosis, 896–897, 898f
 - unilateral coronal synostosis, 891–895, 892f
 - unilateral lambdoid synostosis, 899
- Nonunion
 - mandible, 1251
 - mandibular fracture, 425–426
 - maxilla, 1250–1251
 - maxillary fractures, 442
- Norepinephrine, 338
- Normal radiography of
 - chest, 348f
- Normochromic anemia, 30–31
- Normocytic anemia, 30–31
- Nose
 - air passages
 - children, 528
 - anatomy, 1345–1360
 - anatomy and physiology of, 297
 - basal cell cancer, 707f
 - base alar reduction, 1363
 - bilobed flap of Zitelli, 714
 - blood supply, 1346–1347
 - bones, 437, 1347–1348
 - anatomy of, 437f
 - cartilage, 1347–1348
 - chemicals irritating, 300
 - continuous positive airway pressure
 - for OSA, 1302
 - endoscope, 308f
 - examination
 - fiberoptic, 295
 - external
 - arteries of, 1347f
 - sensory nerves, 1350f
 - fractures
 - children, 537–538
 - incidence, 488
 - gull in flight contour, 1098f
 - laceration, 476f
 - lateral wall
 - arteries of, 1347f
 - musculature, 1346, 1346f
 - nerves, 1348–1350
 - packing
 - balloon catheters, 517f
 - polyps, 298
 - projection, 1353f
 - secretions
 - normal values of, 495t
 - skin, 1345–1346
 - soft tissue, 1345–1346
 - injuries, 364–365
 - structures
 - maxillary surgical procedures, 1224–1225, 1225f, 1225t
 - surface anatomy, 1345, 1345t

- surgery
 - OSA, 1305
 - Novum restoration, 267f
 - NSAID. *See* Nonsteroidal anti-inflammatory drugs (NSAID)
 - Nutrition
 - gunshot wounds
 - neck, 519
 - oral cancer, 635–636
 - wound healing, 12
 - Nystatin
 - for fungal sinusitis, 307
 - O
 - Obesity, 40, 58
 - drug pharmacokinetics, 40
 - pulmonary problems, 40
 - thrombophlebitis, 40
 - Obstructive disk blockade, 975
 - Obstructive pulmonary disease
 - physical examination of, 71–72
 - Obstructive sleep apnea (OSA), 1297–1311, 1298, 1309f, 1310f
 - bimaxillary advancement surgery for
 - soft tissue changes associated with, 1233–1234
 - Bi-PAP, 1304
 - cephalometric examination, 1300–1301, 1300f
 - clinical manifestations of, 1299
 - CPAP, 1304
 - CT, 1301
 - diagnosis, 1300–1302
 - history of, 1299
 - laser-assisted uvulopalatoplasty, 1306–1307
 - maxillomandibular advancement
 - soft tissue changes associated with, 1233
 - medical treatment, 1302–1304
 - obstruction site, 1301–1302
 - oral appliances, 1302–1304, 1303f
 - orthognathic surgery procedures, 1307–1311
 - physical examination, 1300
 - physical findings, 1299
 - polysomnography, 1301
 - surgery, 1304–1311
- Obturator
 - TMJ arthroscopy, 970
- Obwegeser's osteotomies of the ramus, 1150, 1150f, 1179
- Obwegeser's technique, 415, 421
- Occlusal adjustment
 - for TMJ, 959
- Occlusal radiographs
 - alveolar and dental fractures, 386–387
 - alveolar cleft reconstruction, 868f, 869f
- implants, 252
- Occlusal splint, 267f
 - for TMJ arthroscopy, 984
- Occlusion
 - craniofacial dysostosis syndrome, 903
- Occult neck metastasis, 644
- OCIF/OPG
 - TMJ, 943
- O'Conner, Richard, 963
- Octylcyanoacrylate, 360
- Ocular. *See* Eyes
- Oculocephalic maneuver, 347, 347f
- Oculocephalic response, 347f
- Oculovestibular response test, 347
- Odontogenic carcinoma
 - classification of, 588t
 - clear cell, 589
- Odontogenic cysts, 576–582
 - classification of, 577f
 - dentigerous cyst, 576–578
 - glandular, 581–582, 582f
 - odontogenic keratocyst, 578–581
 - prevention of, 141
- Odontogenic infection, 277–292
 - airway compromise, 281–282
 - anatomic location, 277–278
 - antibiotics, 288–290, 288t
 - care setting, 283–284
 - hospital admission
 - indications for, 283t
 - host defenses, 282–283
 - medical support, 287–288
 - operating room procedures for
 - indications for, 284, 284f
 - patient evaluation, 290–292
 - rate of progression, 280–281
 - severity of, 277–282
 - stages of, 280, 280t
 - surgery, 284–287
 - surgical drainage, 284–286, 285f
 - treatment failure
 - causes of, 290t
- Odontogenic keratocysts, 579f, 580f, 699f
- Odontogenic myxoma, 591f
- Odontogenic tumors, 583–594
 - adenomatoid, 593, 593f
 - ameloblastic fibroma, 589–590
 - ameloblastic fibro-odontoma, 590
 - ameloblastoma, 583–588
 - calcifying epithelial, 592
 - classification of, 583t
 - incidence, 584t
 - malignant, 588–594
 - ameloblastic carcinoma, 588–589
 - clear cell odontogenic carcinoma, 589
- epithelial ghost cell tumor, 589
- metastasizing ameloblastoma, 588
- primary intraosseous squamous cell carcinoma, 589
- myxoma, 591–592
- odontoma, 590–591, 591f
- Odontoma, 590–591, 591f
- Ohngren's line, 645
- Ohnishi, Masatoshi, 964
- Olfactory bulb
 - esthesioneuroblastoma
 - radiotherapy, 637f
- One-point fixation
 - vs. two-point fixation, 377
- One-stage protocol, 201–202
- Onlay bone grafts, 177–179, 1274f
- Open arthrotomy
 - TMJ
 - indications for, 943
- Open bites, 1261–1263, 1263f
- Open fractures, 410
- Open pneumothorax, 332–334
- Open reduction and internal fixation (ORIF), 401f, 532
- Open sky
 - approach, 497
 - incision, 996
- Open submucosal vestibuloplasty, 177f
- Open technique
 - subepithelial connective tissue grafting
 - implants
 - recipient-site surgery, 215–217, 216f
- Ophthalmic artery, 1346
- Opiates, 87
 - overdose of, 344
- Opioids
 - abusers, 39–40
 - addiction, 1023
 - end-stage TMJ disease, 1017, 1020–1021
 - pharmacology of, 87–89
 - risk of addiction to, 1021
 - side effects of, 87–88
- Optic nerve, 493
 - injury, 473
- Optic neuropathy
 - traumatic
 - zygomatic arch fractures, 459
- Optimized problem list, 1108–1109
- Oral appliances
 - OSA, 1302–1304, 1303f
- Oral burning sensation, 680
- Oral cancer, 617–622
 - biopsy, 627
 - cervical lymphadenectomy, 666
 - cervical lymph node levels, 619–620

- chemoprevention, 640–641
- chemotherapy, 638–640
- clinical correlation by site, 620–623
- diagnosis, 626–627
- distant metastasis, 626
- histology, 631–632
- lip, 641–645
- perioperative issues, 635–636
- premalignant disease, 618–619
 - treatment, 632–633
- primary lesion assessment, 623–624
- primary tumors, 623t
- radiation, 636–637
- recurrence, 651–653
- regional lymph nodes, 623t
- regional metastasis, 624–626
- sentinel node biopsy, 650–651
- squamous cell carcinoma, 617–618
- staging, 623
- surgery, 633–636
 - complications, 636
- therapeutic neck dissection, 651
- treatment, 631–653
 - future, 653
 - panendoscopy, 633
 - selection, 633
- Oral candidosis, 680f, 681f
- Oral cavity
 - fungal disease, 680–681
 - inspection of in trauma patient, 349
 - squamous cell carcinoma
 - neck dissection, 648–650, 648f
- Oral decongestants
 - for sinus infection, 305
- Oral disease
 - differential diagnosis, 564–572
- Oral hypoglycemic agents, 60
- Oral melanotic macules, 683
- Oral mucosa
 - bacterial infections, 681–682
 - generalized pigmentation, 682, 682f
 - pigmented lesions, 682–685
- Oral sedation, 109
- Oral submucous fibrosis, 619
- Orbicularis oculi, 1322–1323, 1387f
- Orbicularis oris, 1184
- Orbit, 445, 464f
 - anatomy of, 463
 - anterior boundary of, 466
 - apex, 445
 - arterial blood, 1324f
 - fat
 - aging changes, 1324
 - fissures, 464t
 - floor, 445, 463, 464
 - fractures, 480f
 - zygomatic arch fractures, 456–457
- fractures
 - acute repair of, 484–488
 - anatomy of, 463–464
 - clinical examination, 467–470
 - configurations, 467
 - imaging, 470–471
 - medial orbital approach, 483–484
 - nonoperative management of, 476–479
 - surgery, 479–488, 480–484
 - indications, 479–480
 - inferior and lateral orbital approach, 480–482
 - superior and medial orbital approaches, 482–483
- injuries
 - surgery, 477
 - surgery vs. observation, 478
- lateral wall of, 464–465
- ligament, 1386
- lobe, 466
- potential sites for traumatic injuries, 463f
- rim, 1385, 1398f
 - anatomy of, 463
- roof, 445, 464
 - reconstruction, 500
- septum, 466, 1321, 1321f
- structures distance from bony landmarks, 465t
- upper trauma, 533f
- walls
 - anatomy of, 463
- Orbitonasal fracture, 535f
- ORIF, 401f, 532
- Oronasal communication, 1252f
- Orthodontic appliances
 - with surgical exposure
 - of impacted teeth, 134
- Orthodontic band pusher, 866
- Orthodontics, 1111–1134
 - diagnostic list, 1118
 - initial surgical treatment objective, 1118–1119
 - treatment, 1120–1133
- Orthodontic tooth movement
 - soft tissue changes associated with, 1225
- Orthodontic treatment
 - obstruction of, 141
- Orthognathic surgery
 - cleft palate, 1267–1275
 - bone grafting with maxillary advancement, 1272–1273
 - presurgical counseling, 1270–1271
 - cleft palate/maxilla
 - bone grafting, 1273–1274
- complications of, 1247–1263
- dental and periodontal injuries, 1251–1252
- excessive lateral displacement, 1259
- genial segment surgical procedures
 - soft tissue changes associated with, 1229–1233
- historical perspective, 1221
- interference with, 141
- liposuction, 1411–1412
- mandibular surgical procedures
 - soft tissue changes associated with, 1226–1228
- maxillary surgical procedures
 - soft tissue changes with, 1224–1229
- medial displacement, 1259
- motor nerve injuries, 1254–1255
- nasal and sinus considerations, 1255–1256
- OSA, 1307–1311
- poor esthetic results
 - secondary revision of, 1243
- proximal segment rotation, 1259–1260
- soft tissue changes associated with, 1221–1243, 1222t
 - cephalometric considerations, 1222–1223, 1224f
 - orthodontic considerations, 1222
 - orthodontic incisor retraction, 1223–1224
- TMJ dysfunction, 1260–1261
- unanticipated maxillary fractures, 1261
- vascular complications, 1247–1250
- velopharyngeal considerations, 1274–1275
- Orthognathic treatment planning
 - contemporary, 1087–1088, 1088f
- Orthopantomax view
 - osteomyelitis, 315, 315f, 316f, 318f
- Orthotic splints, 966
- OSA. *See* Obstructive sleep apnea (OSA)
- Osada surgical handpiece, 1430
- Osseointegration, 189–202
 - atrophic mandible augmentation, 195–197
 - defined, 192
 - edentulous mandible, 193–197
 - incision design, 194
 - physical examination, 194
 - radiologic examination, 194
 - edentulous maxilla, 197–199
 - eight implants without graft, 198
 - eight implants with sinus grafts, 198–199
 - esthetic sites
 - incisions, 200
 - failure of, 191–192
 - four or more implants, 195
 - implants materials, 189–190
 - one-stage protocol, 201–202

- placement without trauma, 190–191
 restorations, 199–200
 surgical protocol, 190–192
 time for, 191
 two implants, 195
 wound healing, 192–193
 Osseointegration implants, 251f
 ear, 368f
 Osseous surgery, 1186–1187
 Ossification, 1055
 Ossifying fibroma, 599–600, 599f
 Osteoarthritis, 941
 Osteoblastoma, 600, 600f
 Osteoblasts, 7, 165, 192–193, 371
 Osteochondroma, 601–602, 602f
 Osteoclastogenesis inhibitory factor/
 osteoprotegerin (OCIF/OPG)
 TMJ, 943
 Osteoclasts, 8, 166, 786
 Osteoid
 bone formation in, 192–193
 Osteoid osteoma, 600
 Osteoma, 601, 601f
 Osteomeatal complex
 CT, 303f
 diagram of, 296f
 Osteomyelitis, 313–318, 500
 classification of, 314
 clinical characteristics, 314–315
 malignancy masquerading as, 320f
 mandibular fracture, 426
 microbiology of, 314
 pathogenesis of, 313–314
 surgery, 317–318
 treatment, 316–317
 Osteons, 371
 Osteopenia, 307
 Osteoplasty
 arthroscopic, 978f
 ridge split, 176–177
 Osteoporosis, 41, 252, 307, 424
 Osteoprogenitor cells, 164
 Osteoradionecrosis, 318–322
 maxilla, 322f
 Osteotomes, 200, 233f
 and condylar arthroplasty, 1003f
 and lateral nasal wall, 1272f
 and nasal septum separation, 1187f
 Osteotomy, 645–646, 1161–1164. *See also*
 specific osteotomy
 Lane's, 1137f
 lateral wall, 1187f
 of ramus
 Obwegeser's, 1150, 1150f, 1179
 Ostium
 nasolacrimal duct, 437
 Outpatient anesthesia medications
 distribution of, 84–85
 pharmacodynamics of, 83–85
 pharmacokinetics of, 84–85
 pharmacology of, 83–100
 Overdentures
 bar attachment, 264f
 bar splint, 237f
 implant-retained, 264
 implant-supported, 254
 attachment mechanisms for, 265
 long-term overuse, 238f
 precision detachable, 265f
 Oxazepam
 for DT, 39
 Oxidative stress
 TMJ, 942
 Oxycodone
 for TMJ, 951
 Oxygenation
 trauma patient, 336–337
 Oxygen dissociation curve, 57f
 Oxygen therapy
 for OSA, 1302
 Oxymetazoline
 for sinus infection, 305
 Oxymetazoline hydrochloride, 502
 P
 Pacinian corpuscles, 709
 Paclitaxel, 640
 Paget's disease, 611–612, 611f, 612f
 Pain, 405, 494
 frontal sinus, 503
 with impacted teeth removal, 150
 with osteomyelitis, 314
 with TMJ end-stage disease, 1016–1018,
 1016t
 unexplained, 142
 Palate, 1182
 distraction appliance, 1073f
 flaps, 866, 867f
 rotated, 772
 incisions, 218
 mucosa, 1184–1185
 pedicle
 for anterior maxillary osteotomy, 1195f,
 1196f
 pleomorphic adenoma, 673f
 recurrent low-grade polymorphous adeno-
 carcinoma, 674f
 salivary gland tumors, 673–674
 squamous cell carcinoma, 645
 Palatine arteries, 1183f, 1184f, 1248
 Palatine bone, 437, 1188f
 bone removal from, 1197f
 Palatoplasty
 Bardach two-flap, 852
 two-flap, 874f
 Palliative chemotherapy, 639
 Palpebral lobe, 466
 Pancuronium
 pharmacology of, 98
 properties, 99t
 Panendoscopy, 624
 Panfacial fractures, 547–557, 556f–557f
 anatomic considerations, 547–548
 bone grafts, 551–552, 552f
 complications, 555
 etiology, 547
 historical perspective, 547
 soft tissue resuspension, 551–552
 treatment sequence, 552–555, 553f, 554f, 555t
 Panoramic radiograph
 zygoma implants, 244f
 Panoramic radiographs
 alveolar ridge, 163f
 condylar neck fracture, 407, 407f
 condyles asymmetry, 1208f
 edentulous mandible, 194
 facial asymmetry, 1209
 implants, 253
 maxillary canine teeth, 133, 133f
 for preprosthetic and reconstructive
 surgery, 160
 Panorex
 intrusion, 392f
 Papilla
 creating/preserving, 252t
 Papillary epithelial lesion
 asymptomatic, 565f
 Paraformaldehyde-containing paste, 299
 Parallel walled screw, 256
 Paranasal sinuses
 anatomy and physiology of, 297
 children, 529
 CT, 304f
 development of, 1057
 Paraplegia, 38
 Parasymphseal fractures, 541f
 children, 541
 Parasympysis fractures, 409
 Pare, Ambroise, 509
 Parel's classification of edentulous maxilla, 197
 Parents
 presence during sedative administration, 105
 Paresthesia
 maxilla, 1253
 with osteomyelitis, 314
 Parotidomasseteric fascia, 994f

- Parotid gland, 358f, 671
ducts
sialogram, 676f
injuries, 358–359, 359f
pleomorphic adenoma, 673f
posterior duct stones, 676
squamous cell carcinoma, 642
stones, 676
terminal duct stones, 676
tumors, 672–673
- Paroxysmal atrial tachycardia (PAT), 27
- Paroxysmal supraventricular tachycardias (PSVT), 51
- Parry-Romberg syndrome, 1207
- Partial-thickness curvilinear incision, 213
- Partial-thickness pedicle flaps
subepithelial connective tissue graft, 212
- Partial transfixion, 1348f
- PASG, 339
- Passive jaw exercise
for TMJ, 955, 955f, 1025
- Pasteurella multocida*, 362f
- PAT, 27
- Pathologic fracture, 410
- Patient follow-up, 572, 572t
- Patient history, 564–565
- PCP
anesthesia with, 122–123
- PDGF-BB, 13, 225
- PDT
leukoplakia, 632–633
- Peck graft, 1361f
- Pectoralis major myocutaneous flaps, 777–778, 777f
harvesting, 796f
- Pediatric patients. *See* Children
- Pedicle grafts, 183
- Pedicle flaps
partial-thickness
subepithelial connective tissue graft, 212
split-thickness
subepithelial connective tissue graft, 212
- Pedicles
passive adaptation of, 207
- Pelvic fracture, 341f, 353
- Pemphigus, 690
antibodies, 690f
- Penicillamine, 691
for rheumatoid arthritis, 36
- Penicillin
avoided with renal patients, 31
mandibular fracture, 425
for rhinosinusitis, 305, 502
- Penicillin V
for odontogenic infection, 289
- Penrose drain, 285
- Pentazocine
avoidance in liver disease, 35
- Pentobarbital
chemical structure of, 90f
pharmacology of, 91
- Peptic ulcer disease, 35–36
- Peptostreptococcus*, 140
- Percussion sensitivity, 385
- Periapical cemento-osseous dysplasia, 598–599, 599f
- Periapical occlusal method, 133
- Periapical radiographs
alveolar and dental fractures, 386–387
implants, 252
- Periarticular ectopic bone formation, 1025–1027
- Pericardial aspiration, 339
- Pericardiocentesis, 339f
- Perichondritis
protruding ear, 1457–1458
- Perichondrium
identification, 1357f
- Pericoronitis
prevention of, 140
- Pericrestal incisions, 206, 206f
- Periimplant soft tissue
papilla regeneration, 207–208, 208f
resective contouring, 207, 208f
surgical maneuvers, 206–208
- Perimandibular space, 278
- Perinasal incision, 551
- Periodontal concussion, 389f
- Periodontal disease
HIV, 689
implants, 252
- Periodontal healing
after replantation, 395f
- Periodontal injuries
classification of, 391–392
- Periodontal ligament
cell metabolites
solutions to replenish, 394t
injury, 385
- Periodontal problems
total alveolar osteotomy, 1167–1168
- Periodontal subluxation, 389f
- Periodontal tissue injuries, 390–395
- Perioperative analgesic medications
pharmacology of, 97
- Perioperative antibiotics
oral cancer, 635
- Perioperative cardiovascular evaluation
algorithm, 70–71
- Perioperative considerations, 47–63
cardiac assessment, 47–53
cigarette smoking, 56–58
electrolytes and acid-base disturbances, 53–54
endocrine assessment, 59–61
malignant hyperthermia, 62–63
pulmonary assessment, 54–55
renal insufficiency, 54
- Perioperative morbidity
risk factors associated with, 47t
- Perioperative risks
determinants of, 17
- Perioral-periorbital carbon dioxide laser
resurfacing, 1426f
- Periorbital ecchymosis, 437, 494
- Periorbital incision sites, 455f
- Periosteum
cells, 373f
children, 529
elevators, 866, 1387f
incision, 452
stripping, 1290
- Peripheral cranial nerves, 357
- Peripheral nerve injuries
pharmacologic management, 827–828, 828t
- Peritoneal lavage fluid
evaluation of, 352t
- Permanent cavity, 511
- Permanent teeth
developing buds, 398f
children, 529
impacted, 132
- PET. *See* Positron emission tomography (PET)
- Petechiae, 685
- Petzel technique, 422f
- Peutz-Jeghers syndrome, 682
- Pfannenstiel's incision, 501
- Pfeiffer syndrome, 903, 924f, 925f
- Pharyngeal flaps, 1274–1275
inferiorly based, 878
superiorly based, 878
- Pharyngeal space
abscess, 282f
computed tomography of, 291f
drainage of, 285f
lateral
borders of, 278t
infection, 279t
- Phenobarbital
chemical structure of, 90f
- Phenol, 1341
- Phenothiazines
children, 117
for psychotic disorders, 39
- Phentolamine
for hypertensive crisis, 50t

- Phenylephrine
for sinus infection, 305
- Phenytoin, 691
- Philtrum height, 1089
- Phonophoresis
for TMJ, 956
- Photoaging
Glogau's classification, 1419, 1419t
medical care of, 1420–1421
- Photodynamic therapy (PDT)
leukoplakia, 632–633
- Pierre Robin, 74, 104
- Piezoelectric sinus window, 233f
- Piezoelectric surgery, 233
- Pigmented lesions, 704f
localized, 682–685
oral mucosa, 682–685
- Pilot drill, 242f
- Pindborg tumor, 592, 593f
- Pink puffers, 73
- Pipercuronium
properties, 99t
- Pipe smoking
lip cancer, 659
- Pituitary gland, 76
- Plagiocephaly
description of, 1206–1207
frontal and superior views, 888f
and nasal bridge, 889f
positional, 891f
right anterior, 893f–894f
- Plain radiographs, 568
abdominal trauma, 352
atrophic mandible, 196f
zygomatic complex fractures, 448
- Plantar pitting, 581f
- Plaques, 18, 19
- Plastic skin, 1428
- Platelet-derived growth factor-BB (PDGF-BB), 13
- Platelet release, 224–225
- Platelet-rich plasma (PRP), 221, 792–794, 793f
- Platysmal plication, 1370f
- Playground injuries, 383
- Pleomorphic adenoma
palate, 673f
parotid gland, 673f
salivary gland, 671
- Plication, 1045, 1045f, 1371, 1372f
vs. imbrication, 1372f
- Plunger attachments, 265
- PMI, 22
- Pneumatic antishock garments (PASG), 339
- Pneumonia, 38
- Pneumothorax, 333f
closed, 333
tension, 332, 334, 335f
- Pocket principle, 366
- Pogonion
osseous resorption at, 1232f
- Point of maximal impulse (PMI), 22
- Pollutants, 300
- Polyethylene-tipped instruments, 271f
- Polymeric silicone catheter, 359
- Polymeric silicone implant, 1009f
- Polymeric silicone tubes, 364, 365f
placement of, 505f
- Polymorphous adenocarcinoma
low-grade, 672
recurrent low-grade
palate, 674f
- Polymyxin B sulfate, 359
- Polyostotic fibrous dysplasia, 597
- Polyps
recurrent, 310
- Polytetrafluoroethylene (PTFE), 1008
- Ponderal index, 40
- PONV, 100
children, 117–118
- Porcelain fracture, 270
- Porcelain-fused-to-metal, 239f
- Porous polyethylene implants, 1201f
- Porphyromonas*, 140, 288, 426
- Positron emission tomography (PET), 569
cervical lymph nodes, 647, 648f
oral cancer, 626, 626f
- Postauricular coronal (scalp) incision, 907
- Posterior cranial vault esthetic unit
craniofacial dysostosis syndrome, 903
- Posterior ethmoidal foramen, 465
- Posterior ethmoid artery, 1346
- Posterior maxilla
FPD, 262
- Posterior maxillary osteotomy, 1196–1197, 1196f
- Posterior plagiocephaly, 890
- Posterior teeth
distalizing, 1123
- Posteroanterior cephalometric radiographs
facial asymmetry, 1209
- Postnatal skull
changing proportions, 1059f
- Postoperative instructions
facial liposuction, 1418
- Postoperative nausea and vomiting (PONV), 100
children, 117–118
- Postoperative occlusal discrepancies, 1261
- Postorthodontic models, 549f
- Posturing
abnormal, 346
- Preauricular incision, 993f
- Precession, 514
- Predistracted hyperbaric oxygen therapy, 1289
- Prednisone
for sinus infection, 305
and wound healing, 11
- Preemptive analgesia
end-stage TMJ disease, 1016–1018
- Pregnancy, 42
medications to avoid during, 42t
testing
adolescents, 107
- Preload, 22, 26, 49
- Premachined abutment
for cement-retained restorations, 257f
for screw-retained restorations, 257f
- Premature ventricular contraction (PVC), 27
- Premaxilla
bone grafts, 1274f
congenital agenesis, 1285
traumatic avulsion, 1287f
- Premolars
impacted, 133–134
replacement
maxilla, 199f
restoration, 199
- Prenatal craniofacial development, 1051–1058
- Preoperative patient, 65–79
bleeding disorders, 78
cardiovascular disease assessment, 21f, 66–70, 107
endocrine assessment, 74–77
fasting, 105–106
liver disease, 77
neurologic disorders, 78–79
neuromuscular disorders, 78–79
psychological, 105
pulmonary assessment, 71–73
questionnaire, 17t
renal disease, 77–78
screening tests for asymptomatic patients, 79
- Preprosthetic and reconstructive surgery, 157–185
alveolar distraction osteogenesis, 183–185
bone
regeneration, 162–164
exostoses, 169
fibrous inflammatory hyperplasia, 172
genial tubercle reduction, 169–170
grafts, 165–167
hard tissue
augmentation, 175–180
recontouring, 167–171
hypermobile tissue, 172
inflammatory papillary hyperplasia, 172

- labial and lingual frenum, 172–174
- medical considerations, 159–161
 - hard and soft tissue, 159–160
 - radiographic evaluation, 160–161
- mylohyoid ridge reduction, 171
- ridge extension procedures, 174–175
- skeletal and alveolar ridge discrepancies, 180–181
- soft tissue recontouring, 171–173
- tori removal, 170–171
- treatment planning, 161–162
- tuberosity reduction, 169, 170f
- Preseptal cellulitis, 304
- Press-fit cylinder-type implant, 256f
- Presurgical orthodontics, 1119–1120
 - goals, 1118, 1119f
- Presurgical orthopedic (PSO) appliances, 846
- Pretracheal space
 - borders of, 278t
- Pretrichial forehead lift, 1395–1396
- Prevotella*, 288
- Primary bone
 - healing, 373f
 - loss, 159
 - union, 371
- Primary intraosseous squamous cell carcinoma, 589
- Primary retention, 132
- Primary teeth
 - incomplete eruption of, 1116f
 - lack of eruption, 131
- Primidone, 691
- Principle of favorableness, 408
- Procainamide, 691
- Procera titanium framework
 - zygoma implants, 248f
- Procerus, 1387f
- Profile view
 - macroesthetic examination, 1101
- Proliferation
 - vs. apoptosis, 576f
- Propofol, 100
 - chemical structure of, 91f
 - children, 113
 - pharmacology of, 91–93
- Propofol-infusion syndrome, 113
- Propoxyphene
 - reduction in liver disease, 35
 - for TMJ, 951
- Proptosis, 495
- ProRoot, 394
- Prosthetic Fox plane, 1215f
- Prosthetic heart valves, 25
 - mitral valve prolapse, 25
- Proteus*, 300
- Prothrombin, 77
- Protriptyline
 - for OSA, 1302
- Protruding ear, 1098f, 1449–1458
 - complications, 1456–1458
 - surgical correction of, 1452–1456
- Protruding earlobe
 - correction of, 1456
- Prozac
 - TMJ, 953
- PRP, 221, 792–794, 793f
- Pseudoaneurysms, 517
 - maxillary fractures, 442
- Pseudoephedrine, 502
 - for sinus infection, 305
- Pseudomonas*, 301
- Pseudomonas aeruginosa*
 - TMJ, 944
- Pseudoshave biopsy, 704
- PSO appliances, 846
- PSVT, 51
- Psychiatric disorders, 38–40
 - affective disorders, 38–39
- Psychological assessment, 105
- Psychotherapy
 - for TMJ, 957–958
- Psychotic disorders, 39
 - illicit drug abusers, 39–40
 - opioid abusers, 39–40
 - substance abuse, 39–40
- Pterygoid fovea, 934
- Pterygoid muscle, 938–939, 939, 939f
 - lateral, 784
- Pterygoid plates, 644
- Pterygoid space
 - squamous cell carcinoma, 642
- Pterygomandibular space, 278
 - abscess, 282f
 - computed tomography of, 291f
 - borders of, 278t
 - infection, 279t
- Pterygomaxilla
 - fissure grafts, 1179
 - junction, 1183f
 - separation, 1187f
- Pterygomaxillary
 - suture, 437
- PTFE, 1008
- Ptoxis, 495, 1329f, 1385f, 1394f
 - chin, 1242
 - upper eyelid blepharoplasty, 1339–1340
- Pulmonary assessment, 54–55, 71–73
 - bronchitis, 73
 - capnography, 59
 - emphysema, 73
 - obesity, 58
 - ventilation, 59
- Pulmonary contusions, 348
- Pulmonary edema, 24
- Pulmonary function
 - age-related changes, 41
 - testing, 28
- Pulp
 - healing
 - after replantation, 394f
 - injuries
 - diagram of, 388f
 - testing, 385
 - viability, 385
- Pulseless ventricular tachycardia, 52
- Pulse oximeter, 57, 282
 - sources of error in, 58t
- Pulse rate, 338
- Pulsus paradoxus, 338
- Punch biopsy, 704
- Pupillary light
 - reactivity, 468
 - reflex, 347
- PVC, 27
- Q
- Quad-helix, 1072f
- Quadrant defects, 468
- Questionnaire
 - preoperative patient, 17t
- Quetiapine
 - for psychotic disorders, 39
- R
- Radial forearm free flaps, 804–811, 806f, 810f
 - anatomic considerations, 807–809
 - blood supply, 807
 - complications, 808–809
 - development, 805–807
 - technique, 809–811
 - vascular abnormalities, 807–808
- Radiation injury
 - and wound healing, 11
- Radiation therapy
 - periarticular ectopic bone formation, 1025–1027, 1026f
- Radical neck dissection, 648, 649f
- Radiographs. *See also* Panoramic radiographs
 - alveolar and dental fractures, 386–387
 - cervical spine, 351, 351f
 - dentoalveolar injuries, 386–387
 - facial asymmetry, 1209
 - implant prosthodontics
 - biomechanical considerations, 252–253
 - complications of, 270

- lateral cephalometric
 - facial asymmetry, 1209
- mandible fracture, 406–407, 407f
- mental foramina, 253f
- occlusal
 - alveolar and dental fractures, 386–387
 - implants, 252
- periapical
 - alveolar and dental fractures, 386–387
 - implants, 252
- plain, 568
 - of abdominal trauma, 352
 - atrophic mandible, 196f
 - zygomatic complex fractures, 448
- posteroanterior cephalometric
 - facial asymmetry, 1209
- Water's
 - maxillary fractures, 438f
 - maxillary sinus, 470f
 - zygoma implants, 240, 245f
 - zygomatic complex fractures, 447–448
- Radionuclide imaging, 569
- Radioprotectants, 638
- Radiosensitizers, 638
- RADPLAT protocol, 640
- Ramus, 784
 - fracture
 - ascending, 409
- Ramus buccal shelf block graft harvest, 225–230, 228–229
 - case studies, 226–230
 - recipient site morbidity, 229
- Randall-Tennison repair, 847
- Raney clips, 483
- Ranulas, 676–677, 677f
- Rare earth magnets, 134
- Reactive airway disease, 55
 - treatment of, 55–56
- Reapproximation, 795f
- Recipient site
 - soft tissue grafts, 209
- Recombinant human bone morphogenetic protein-2 (rhBMP-2), 13, 162
- Recombinant human bone morphogenetic protein-7 (rhBMP-7), 13
- Recombinant human keratinocyte growth factor 2 (KGF-2), 13
- Reconstructive surgery. *See* Preprosthetic and reconstructive surgery
- Rectal sedation, 110
- Reduced enamel epithelium, 576
- Reed-Sternberg cells, 688
- Reepithelialization, 5
- Regeneration, 3
- Regional anesthesia
 - end-stage TMJ disease, 1017
- Regional dynamic forces, 376–377
- Regional flaps, 769–781
- Reiche, Charles Frederick William, 435
- Relaxation
 - for TMJ, 957
- Relaxed skin tension lines (RSTL), 769
- Releasing incisions, 218, 242
- Remifentanyl
 - chemical structure of, 88f
 - pharmacology of, 89
- Removable anterior repositioning splints
 - OSA, 1303
- Removable overdenture-type prosthesis, 198
- Removable prostheses
 - success of, 259
- Removal, 136
- Renal. *See* Kidneys
- Repair, 3
- Repositioning appliances
 - for TMJ, 958–959, 958t, 959f
- Residual ridge form, 159
- Resin base fracture, 270
- Resorbable fixation materials
 - children, 542
- Resorbable plate, 425f
- Resorbable screws, 1154
- Resorption
 - modified Cawood and Howell classification of, 161f
- Respiradone
 - for psychotic disorders, 39
- Respiratory acidosis, 53
- Respiratory arrest
 - algorithm for, 57f
- Respiratory problems, 28–30
 - airway and lung assessment, 28
 - asthma, 28–29
 - chronic obstructive pulmonary disease, 29–30
- Restrictive cardiomyopathy, 69
- Retinoids, 632, 641, 1421
 - nonmelanoma skin cancer, 709
- Retrobulbar hematoma, 472, 472f
- Retrobulbar hemorrhage
 - zygomatic arch fractures, 459, 459f
- Retrograde knives
 - TMJ arthroscopy, 970
- Retromolar fossa, 674
- Retromolar gingiva cancer, 621
- Retromolar trigone
 - cancer, 621
 - oral cancer, 642
 - squamous cell carcinoma, 642f
 - ulcerative carcinoma, 622f
- Retropharyngeal space
 - borders of, 278t
- Revised Trauma Score, 328–329
 - variables, 329t
 - predicting mortality, 329t
- rhBMP-2, 13, 162
- RhBMP-7, 13
- Rhegmatogenous retinal detachment, 473
- Rheumatoid arthritis, 36, 1037, 1037f
- Rhinitis
 - allergic, 106–107
- Rhinitis medicamentosa, 305
- Rhinoplasty, 1345–1363
 - anesthesia, 1354
 - cosmetic evaluation, 1350–1354
 - endonasal
 - surgical sequence for, 1356t
 - external
 - surgical sequence for, 1356t
 - facial analysis, 1351
 - functional considerations, 1354
 - incisions, 1354–1355
 - nasal analysis, 1351
 - nasal anatomy, 1345–1360
 - nasal base alar reduction, 1363
 - nasal dorsum, 1358–1359
 - nasal tip, 1359–1363
 - osteotomies, 1359
 - photographs, 1354
 - postoperative, 1352f, 1363
 - preoperative, 1351f
 - psychiatric stability, 1351
 - tip projection, 1360–1361
 - tip rotation, 1361–1362
 - tip shape, 1362
 - turbinectomy, 1358
- Rhinorocket, 438
- Rhinosinusitis, 296, 502
 - factors associated with history of, 296t
 - treatment, 305
- Rhombic flaps, 773, 774f
- Rhytidectomy, 1365–1379
 - with complementing procedures, 1375f
 - deep plane, 1373–1378
 - flap development, 1371–1372, 1371f
 - generations of, 1366t
 - historical development, 1365–1366
 - incision, 1369f, 1370f
 - liposuction-assisted, 1412, 1413f
 - patient evaluation, 1366–1368
 - requirements, 1366t
 - skin closure, 1372–1373
 - superficial plane, 1368–1373, 1374f
 - surgical technique, 1368–1378
 - trocator sites, 1368f

- Rhytids, 1329
 Ribs
 accessory muscles, 103
 children, 103
 Ridge split osteoplasty, 176–177
 Rifle cartridges, 512f
 Rifles, 512
 Rifling, 513
 Rigid bronchoscope, 624
 Rigid fixation
 mandibular fracture, 423
 Rigid internal fixation
 mandibular fracture, 372f
 maxillary fractures, 439
 vs. nonrigid internal fixation, 371–382
 Rimfire, 514
 Rim/marginal incision
 rhinoplasty, 1355
 Ring sign, 348
 Risdon incision, 421
 Robinson Inter-OSS alveolar device, 184
 Robinson technique, 422f
 Rocuronium
 pharmacology of, 98
 properties, 99t
 Rofecoxib
 for rheumatoid arthritis, 36
 Root canal resorption, 391
 Roots
 adjacent to interdental surgical sites
 divergence of, 1129–1130
 fracture, 389–390
 in third molar removal, 151
 impacted teeth, 144
 injured surface, 1252f
 resorption
 classification of, 390
 surface resorption, 390–391
 Rotary trough, 172f
 Rotated flaps, 1270f
 Rotated palatal flaps, 772
 Rotated teeth, 1131
 Rotational flaps, 713–714, 771f, 772
 Round bur, 242f
 Rounds, 512
 Rowe disimpaction forceps, 440, 440f
 RSTL, 769
 Rubella, 689
 Rule of 10's, 844

 S
 SAARD
 for rheumatoid arthritis, 36
 Saddle nose, 364
 Saethre-Chotzen syndrome, 923–925

 Sagittal osteotomy, 1136–1137
 of horizontal ramus, 1164
 of vertical ramus
 mandibular range of motion, 1159–1160
 Sagittal split osteotomy, 1153, 1215. *See also*
 Bilateral sagittal split osteotomy
 (BSSO)
 aseptic necrosis, 1250
 facial nerve injury, 1255f
 hemorrhage, 1249
 mandibular advancement, 1283f
 sensory injuries, 1253–1254
 Sagittal synostosis, 890
 Salicylates
 for TMJ, 950–951
 Salicylic acid peels, 1423, 1423f
 Salivary-cutaneous fistula, 523f
 Salivary ducts
 gunshot wound, 522
 Salivary glands
 injuries, 1263–1264
 minor
 tumors, 673–674
 obstructive disease, 674–675
 tumors, 671–677
 benign, 671–672
 histopathology, 671–672
 malignant, 672
 site, 672–673
 Sanders, Bruce, 964
 Sandwich osteotomy, 183f
 Sandwich-visor osteotomy, 184f
 SARPE. *See* Surgically assisted rapid palatal
 expansion (SARPE)
 Save-A-Tooth, 393
 SCALP, 1386
 Scalp
 defects, 713f
 laps, 773f
 soft tissue injuries, 363–364
 squamous cell carcinoma, 711f
 Scalp incision, 907
 Scapha buckling, 1458
 Scaphocephaly, 890f
 Schwann cells, 6, 823
 Schwannoma, 610
 Scissors, 1371f
 TMJ arthroscopy, 970
 Scleral rupture, 472
 Scleroderma, 1034f, 1037
 Scopolamine, 99, 473
 Screening tests
 for asymptomatic patients, 79
 Screw-retained prosthesis, 262f
 Screw-retained restorations, 261

 Screw retention
 vs. cement retention, 260t
 Screws, 439
 loosening of, 270
 Scroll
 configurations of, 1348f
 Seat belts, 529
 Secobarbital
 chemical structure of, 90f
 Secondary bone healing, 373f, 374f
 Secondary bone loss, 159
 Secondary growth deformities, 1207
 Second molars
 impacted, 132, 135f
 Sedation, 93, 109
 children, 103–123
 Sedatives
 parents' presence during administration of,
 105
 Seddon classification, 824f
 Segmentalization, 1186f, 1190–1191
 loss of vascularity, 1249–1250
 Seizure disorders, 37
 Selective neck dissection, 649
 Selective serotonin reuptake inhibitors
 for affective disorders, 38
 Selective serotonin reuptake inhibitors (SSRI)
 for TMJ, 952–953
 Semilunar incision, 501
 Senile keratosis, 698
 Senn retractor, 1188f
 Sensitivity testing
 odontogenic infection, 286–287
 Sensory nerve, 445, 1325–1326, 1451
 Sensory recovery
 classification of, 830t
 Sentinel node biopsy, 650–651, 650f
 Sentinel vein, 1389
 Septocutaneous arteries, 710
 Septoplasty, 1238, 1355–1358
 Serine proteases, 6
 Seromas
 cervicofacial liposuction, 1411
 Serotonin receptor antagonists
 children, 117–118
 Serum
 normal values of, 495t
 Serum albumin, 77
 Serum aspartate transaminase, 35
 Serum prealbumin, 12
 Setback genioplasty
 soft tissue changes associated with, 1233t
 702L tapered fissure bur, 225
 Severe maxillary vertical deficiency, 231f
 Sevoflurane, 95

- chemical structure of, 96f
- children, 114, 115
- pharmacology of, 97
- Shave biopsy, 704
- Shield graft, 1361f
- Shock
 - assessment of, 337
- Shock trauma center
 - University of Maryland, 527
- Short subcondylar osteotomy, 1252f
- Shot
 - classification of, 513
- Shotguns, 512
 - shells, 513f
 - wounds, 515
- Sialography, 568
- Sialoliths
 - calcified, 674
- Sigmoid notch
 - excessive flaring at, 1259f
- Silicone elastomer, 1008
- Silverman technique, 422f
- Simon's method, 1353
- Simple fracture, 409, 409f
- Single-incision approach
 - subepithelial connective tissue graft
 - harvesting, 212–213, 214
- Single-stage gold implant, 189
- Single-tooth osteotomy, 1132, 1132f
- Sinonasal mucosa
 - histology of, 298f
- Sinonasal polyps, 298
- Sinonasal tumors, 298
- Sinus. *See also* Frontal sinus
 - bone grafts, 232–234, 241f
 - dysrhythmia, 1299
 - ethmoid, 494f
 - anatomy and physiology of, 297
 - grafts, 192, 198–199
 - infection, 295–310
 - anatomic factors, 298–299
 - clinical characteristics of, 296–297
 - diagnosis of, 302–305
 - etiology, 297–302
 - fungi, 300–301
 - genetic disorders, 301–302
 - inflammatory conditions, 299–300
 - treatment, 305–310
 - medical management, 305–307
 - surgery, 307–310
 - lifts, 179–180, 181f
 - obliteration, 501, 502f
 - postoperative medical therapy, 502–503
 - postoperative symptoms, 1256–1257
 - tachycardia, 25, 27
 - window, 243f
- Sinusitis, 295, 299f, 442, 500. *See also* Rhino-sinusitis
 - allergic fungal, 301, 304f
 - Aspergillus*, 304f
 - bacteriology of, 300–301
 - complications of, 304
 - etiology, 299t
 - fungal, 303–304
 - intracranial complications of, 305f
 - maxillary, 299
 - orbital complications of, 305f
- Sinus slot technique
 - zygoma implants, 243f
- Sjögren's syndrome, 37
- Skeleton
 - craniofacial
 - growth and remodeling field of, 165f
 - nasal base, 1439–1443
- Skin
 - aging, 709
 - biomechanics, 711–712
 - blood supply, 710
 - cross-section of, 1420f
 - laser resurfacing, 1342
 - perfusion
 - in trauma patient, 337–338
 - rejuvenation, 1419–1432
 - mechanical resurfacing procedures, 1429–1432
 - resurfacing
 - ablative, 1420t
 - postoperative complications, 1432t
 - rhinoplasty, 1351
- Skin cancer. *See* Nonmelanoma skin cancer
- Skin grafts, 8, 716–717
 - age-related changes, 41
 - full-thickness, 8, 717–718
 - reinnervation of, 8
 - split-thickness, 8, 718–719
- Skin-muscle flap, 481
 - excision of, 1332
- Skoog's technique, 1365
- Skulls
 - by age, 539f
 - assessment of
 - in trauma patient, 345–346
 - fractures
 - basilar, 471
- SLE, 36–37, 691
- Sleep
 - normal stages of, 1297
- Sleep apnea
 - craniofacial dysostosis syndrome, 902–903
- Sleep apnea syndrome, 1297–1300
 - classification of, 1298
 - differential diagnosis, 1298–1299
- Sleep paralysis, 1298
- Sleep-related abnormal swallowing syndrome, 1298
- Sleep-related nocturnal myoclonus, 1298
- Slenderizing teeth, 1121, 1121f
- Sliding, 710
- Sliding buccal gingival flap, 1270f
- Slit-lamp examination, 468, 470
- Slow-acting antirheumatic drugs (SAARD)
 - for rheumatoid arthritis, 36
- SMAS. *See* Superficial musculoaponeurotic system (SMAS)
- Smile
 - gummy, 1097f
- Smile arc, 1090–1091, 1104, 1105f
- Smoking, 71, 252, 719
 - melanin pigmentation
 - gingiva, 682
 - orbital injuries, 481
 - squamous cell carcinoma, 617
 - and wound healing, 10
- Sniffing position, 281
- Sodium bicarbonate
 - for blepharoplasty, 1331
- Sodium citrate, 106
- Soft endotracheal tube
 - children, 528
- Soft eye, 470
- Soft palate
 - squamous cell carcinoma, 645f
- Soft tissue
 - craniofacial dysostosis syndrome, 907
 - grafts, 209–217
 - implants, 208–209, 220–221
 - incision
 - maxillary surgery, 1185f
 - injuries, 349
 - cleansing, 359
 - closing, 360
 - ear, 365–366
 - eyelids, 364–365
 - forehead, 363–364
 - lip, 366
 - management of, 357–358
 - nasolacrimal apparatus, 364–365
 - neck, 366–367
 - nose, 364–365
 - postoperative care, 368–369
 - repair of, 359–360
 - scalp, 363–364
 - types of, 360–363
 - integration, 205
 - management
 - implants, 205–221

- resuspension
 - panfacial fractures, 551–552
- Solar keratosis, 698
- South America, 189
- Soviet AK-47, 512
- Spade drill, 191
- Spark erosion, 265
- Spatial descriptors, 1346f
- Specimens, 570–571
- Speckled erythroplakia, 619
- Spectacle incision, 497
- Sphenoid bone, 437
- Sphenopalatine artery, 1346
- Sphenopalatine foramen, 1183
- Sphenozygomatic suture, 549–550, 550f
- Sphincteroplasty procedure, 880f
- Spinal accessory nerve
 - dissection, 649f
- Spinal cord disorders, 38
 - neurologic examination of, 350
 - physical examination of, 350
 - in trauma patient, 349–352
- Spiral drill, 191
- Spirometry, 28
- Spline implants, 228
- Splints. *See also* specific splints
 - avulsed tooth, 395, 396t
 - crowns, 224
- Split-thickness flaps
 - supraperiosteal dissection, 214
- Split-thickness pedicle flaps
 - subepithelial connective tissue graft, 212
- Split-thickness skin grafts, 8, 718–719
- Sports, 530
 - contact, 383
- Squamous cell carcinoma, 321f–322f
 - alveolar ridge, 621f
 - alveolus, 644–645
 - basaloid, 632
 - buccal mucosa, 621f, 642, 642f
 - cervical lymph nodes, 646–648
 - description of, 700–701
 - floor of mouth, 644f
 - gingiva, 644–645
 - lip, 641–645, 642f
 - lower lip, 661f, 663f
 - on midforehead, 714f
 - nasal defect after excision, 775f
 - on nasal tip, 702f
 - and NMSC, 697
 - oral cavity
 - neck dissection, 648–650
 - risk factors for, 617–618
 - palate, 645
 - primary intraosseous, 589
 - retromolar trigone, 642f
 - scalp, 711f
 - soft palate, 645f
 - tongue, 643–644, 644f
 - well-differentiated
 - lip, 660–661
- Squamous papilloma, 565f
- SSRI
 - for TMJ, 952–953
- Stability
 - BSSO, 1155–1156
 - horizontal ramus osteotomies, 1164
 - total alveolar osteotomy, 1167
 - VSO, 1145–1146
- Stabilization appliances
 - for TMJ, 958, 958f, 958t
- Stafne's bone defect, 609–610, 610f
- Staphylococcus*, 362f
- Staphylococcus aureus*, 287, 300
 - TMJ, 944
- Steiger bur, 1191f
- Steinmann pin, 1214
- Stensen's papilla, 676
- Stents, 253f, 254f, 261f, 270f
 - implants, 253–254
- Stephenson technique, 422f
- Step osteotomy, 1162f, 1163f
- Stereolithographic modeling
 - facial asymmetry, 1209
- Sternocleidomastoid flap, 779, 780f
- Sternocleidomastoid muscle
 - blood supply to, 779f
- Sternocleidomastoid torticollis, 1207
- Steroids, 424
 - for adrenal gland disorders, 34
 - for asthma, 29
 - immunocompromised, 283
 - impacted teeth removal, 149
- Stevens-Johnson syndrome, 693
- Stickler's syndrome, 842
- Stiffness, 281
 - with impacted teeth removal, 150
 - with osteomyelitis, 314
 - zygomatic arch fractures, 459–460
- Stout's method, 415
- Strauman system, 201
- Streptococcus*, 288, 362f, 426
- Streptococcus pneumoniae*, 300
- Streptococcus pyogenes*, 300
- Streptococcus viridans*, 289
- Stress relaxation, 712
- Stroke, 37
 - caused by hypertension, 32
- Stud-retained overdenture, 263f
- Subapical osteotomies, 1164–1166
 - anterior, 1164–1165, 1164f
 - Kole's, 1138f
 - posterior, 1165–1166, 1166f
- Subarachnoid hemorrhage
 - CT, 346f
- Subciliary incision, 453f, 481, 551
- Subcondylar fracture, 405
 - mandible series, 408f
- Subcondylar osteotomy, 1135
- Subconjunctival hemorrhage, 469f
- Subcutaneous dissection, 1376f
- Subcutaneous fat atrophy
 - TMJ
 - arthroscopy, 986
- Subdural hemorrhage, 345f
 - CT, 346f
- Subepithelial connective tissue grafting
 - harvesting from premolar region, 212–213
- implants
 - donor-site surgery, 212–213, 214f
 - recipient-site surgery, 214–215
- Sublingual ecchymosis, 406
 - floor of mouth, 385
- Sublingual gland, 671
 - tumors, 674
- Sublingual space
 - borders of, 278t
- Subluxation, 391–392, 391f
 - maxillary central incisor, 392f
- Submandibular gland, 671, 674f
 - anterior duct stone, 675
 - posterior duct, 675
 - retraction of, 675f
 - tumors, 673
- Submandibular space
 - borders of, 278t
 - infection, 279t
 - through-and-through drain, 286f
- Submasseteric space, 278
 - borders of, 278t
 - infection, 279t
- Submental intubation, 439f
- Submental space
 - borders of, 278t
 - infection, 279t
- Submentovertebral view
 - zygomatic complex fractures, 448
- Submerged implants
 - ready for abutment connection, 211f
- Submerged teeth, 131
- Submergible threaded cylindrical implant, 189
- Submucous vestibuloplasty, 174
- Subperiosteal abscess, 304, 305f
- Subperiosteal dissection, 465
- Subscleral hemorrhage, 346

- Substance abuse, 39–40
 children, 120–123
 inhalational
 anesthesia with, 122
 maxillofacial trauma, 384
 Substance P, 300
 Succinylcholine
 avoiding in malignant hyperthermia, 38
 children, 116
 pharmacology of, 98
 properties, 99t
 Suction-assisted lipectomy
 informed consent, 1416–1417
 Suction device, 1409
 Sufentanil
 chemical structure of, 88f
 pharmacology of, 89
 Suicide
 shotgun wounds, 515, 515f
 Sulbactam, 944
 Sulcular incision, 225
 Sulfa
 avoided with renal patients, 31
 Sulfasalazine
 for rheumatoid arthritis, 36
 Sulfonyleureas
 mechanism of action, 60t
 Sunder classification, 824, 824f
 Sunscreens, 700
 Superficial chemical peeling, 1422–1423
 Superficial fascia, 992
 Superficial musculoaponeurotic system (SMAS), 1318, 1374–1378
 description of, 1318
 and manipulation, 1371
 and rhytidectomy, 1365
 and subcutaneous dissection, 1374, 1376f, 1377f
 Superficial spreading melanoma, 684
 Superficial temporal
 infection, 279t
 Superficial temporal artery, 1389
 Superior dislocation, 411
 Superior joint space, 996f
 Superiorly based pharyngeal flaps, 878, 879f
 Superior meatus
 anatomy and physiology of, 297
 Superior oblique muscle pulley, 465
 Superior orbital fissure syndrome, 472
 zygomatic arch fractures, 459
 Superior orbital rim, 464
 Suprahyoid muscles, 938, 1141
 Supramandibular muscles, 938
 Supraomohyoid neck dissection, 649f
 Supraorbital bar reconstruction, 500
 Supraorbital nerves, 465, 1325, 1389, 1393f
 Supraorbital notch, 464
 Supraorbital ridge fractures
 children, 532
 Supraorbital vessels, 1393f
 Supratarsal fold incision, 452, 453f
 Supratrochlear nerve, 1389, 1390
 Supraventricular tachycardias, 25
 Surgeons
 experience and training of, 149
 Surgical guides, 1288f
 Surgically assisted rapid palatal expansion (SARPE), 1197–1198
 arch length discrepancy, 1198
 arch morphology, 1198
 history, 1197–1198
 surgical technique, 1198–1200, 1199f, 1200f
 vertical dimension, 1198
 Surgical microscope
 historical development of, 803
 Surgical mobilization
 position in facial asymmetry, 1213
 Surgical patient
 medical management of, 17–42
 Surgical splints
 maxillary fractures, 440–441
 Surgical stent
 for implant placement, 164f
 Suture milia
 upper eyelid blepharoplasty, 1339
 Sutures
 neonatal skull, 1060f
 Sweat test, 301
 Swelling
 with impacted teeth removal, 150
 Swiss Association for the Study of Internal Fixation (AO/ASIF)
 compression plates, 402
 fracture management biomechanical principles, 373
 Swiss screw, 201
 Switching stick, 1187f
 TMJ arthroscopy, 971f
 Swivel latches, 266f
 Symmetry
 rhinoplasty, 1351–1352
 Symphysis
 block graft harvest, 225
 donor site morbidity, 228
 force, 404f
 fracture, 405, 409
 bone plate, 382f
 internal wire fixation, 373f
 posteroanterior mandibular view, 414f
 reconstruction, 1288
 Syncope, 68
 Synechiae, 309
 Synovial chondromatosis, 601–602
 TMJ, 945
 Synovial disorders
 classification of, 941t
 Synovium
 TMJ, 934–935
 Syphilis, 681–682
 Syringe liposuction system, 1409f
 Systemic lupus erythematosus (SLE), 36–37, 691
 Systemic reserve
 odontogenic infection, 283
 T
 T3, 33
 T4, 33
 Tachycardia, 338
 with hypotension, 345
 Tagaki, Kenji, 963
 Tanning, 697
 Tapered fissure bur
 702L, 225
 Tapered-wall screw implant, 256f
 Tarsal plate, 466
 Tarsus, 1321, 1322f
 Tattoo deformity, 10
 Tattooing, 359, 360, 685
 TCA, 1341
 peels, 1427t
 Tear film, 1326
 composition, 1326
 Technetium 99m
 facial asymmetry, 1209
 osteomyelitis, 315
 Teeth
 arch symmetry, 1115, 1115f
 missing, 1131
 permanent
 developing buds, 398f
 children, 529
 impacted, 132
 sectioning, 145
 selling for transplantation, 189
 size, 1112–1113
 discrepancy, 1120–1122
 vitality, 385
 Telecanthus, 476
 Telephone ear deformity, 1458
 Telescoped fractures, 410
 Temporal incisions, 450, 1398
 Temporalis fascia, 446
 Temporalis flap, 778–779, 778f
 Temporalis muscle, 938, 938f, 1007

- flap, 778f
- graft
 - disk replacement, 1007f
- Temporalis myofascial flap, 1007
- Temporal space, 278
- Temporary bridge
 - demonstrating vertical deficiency, 230f
- Temporary cavity, 511
- Temporomandibular ankylosis, 1038
- Temporomandibular joint (TMJ)
 - anatomy and physiology of, 933–946
 - arthrocentesis, 963–987
 - arthroscopy, 963–987
 - anesthesia, 971
 - anesthetic complications, 986
 - anterolateral approach, 980
 - appliance therapy, 984
 - approaches, 979, 979f
 - articular pathology, 971–975
 - cannula, 970
 - capsular stretch procedures, 980
 - complications, 984–986
 - contraindications for, 967–968
 - development of, 964–965
 - elevators, 970
 - endaural approach, 980
 - entry errors, 980–981
 - equipment hookup sequence, 971f
 - history, 965–966
 - imaging, 966
 - indications for, 966–967
 - instrument breakage, 985–986
 - instruments, 968–971
 - intra-articular injury, 985
 - joint entry techniques, 975–982
 - lateral eminence release, 984f
 - neurologic injury, 985
 - obturators, 970
 - otologic complications, 986
 - patient selection, 965–966
 - physical examination, 965–966
 - physical therapy, 984
 - posterolateral approaches, 979
 - postoperative management, 982–983
 - postoperative medications, 984
 - preoperative management, 982
 - puncture anatomy and landmarks, 977–979
 - superior posterolateral approaches, 979
 - superoposterior lateral approach, 980
 - troc ar puncture technique, 980, 982f
 - trocars, 970
 - vascular injury, 985
 - visible fields, 983f
 - articular disk, 935–936
 - articular disorders, 941–942
 - benign tumors, 945
 - biologic mechanisms, 942–943
 - bony structures, 933–934
 - capsular herniation, 979f
 - cartilage, 934–935
 - classification, 933
 - coronal view, 934f
 - CPM, 541
 - diet, 950
 - disk immobility, 974f
 - disk migration, 974f
 - disk placement, 975f
 - dysfunction, 1260–1261
 - BSSO, 1158–1160
 - VSO, 1146
 - effusion, 411
 - endaural arthroscopic approach, 981–982, 981f, 982f
 - end-stage disease, 1015–1027
 - pain control, 1016–1018
 - periarticular ectopic bone formation, 1025–1027
 - perioperative management, 1016
 - physical therapy, 1024–1025
 - postsurgical pain management, 1018–1024
 - preemptive analgesia, 1016–1018
 - sympathetically maintained pain, 1024
 - hemarthrosis, 411–412
 - hypermobility, 1044–1047
 - classification, 1044
 - etiology, 1044, 1045t
 - treatment, 1045–1046
 - hypomobility, 1033–1044
 - classification, 1033
 - clinical characteristics, 1033–1034
 - complications, 1040–1044
 - etiology, 1033, 1034t
 - following orthognathic surgery, 1037
 - following radiation therapy, 1036
 - imaging, 1034
 - inflammatory and rheumatologic causes, 1036–1037
 - postcraniotomy, 1036
 - postinfectious, 1035–1036
 - postoperative physical therapy, 1044
 - posttraumatic, 1034–1035
 - treatment, 1037–1040
 - infection, 943–944
 - innervation, 937
 - internal derangement, 989–1010
 - capsular incisions, 995–997, 997f
 - complications, 1010
 - diagnosis, 989–991
 - discectomy without replacement, 1006
 - disk reapproximation, 1002f
 - disk-removal procedures, 1002–1006
 - disk replacements, 1006–1008
 - disk repositioning, 1003f
 - disk-repositioning procedures, 998–1000, 998f, 999f
 - endaural approach, 994–995, 994f
 - operative procedures, 997–1000
 - partial discectomy, 1002–1004, 1004f
 - perforated posterior attachment, 1000–1002, 1001f
 - postauricular approach, 995, 995f
 - postoperative management, 1009–1010
 - preauricular approach, 992–994
 - surgical anatomy, 991–992
 - surgical approaches, 991–1008
 - surgical goals, 991
 - total discectomy, 1004–1005, 1006f
 - internal derangement of, 427–428
 - lateral view, 936f, 937f
 - ligaments, 936–937
 - malignant tumors, 945–946
 - mandibular fracture, 426–429
 - medial view, 937f
 - movement biomechanics, 940
 - musculature, 937–940
 - neoplastic disease, 945
 - nonarticular disorders, 940–941
 - nonsurgical management, 949–959
 - occlusal appliances, 958–959
 - orthopedic development history, 963–964
 - pathology of, 940
 - perforated disk, 942f
 - pharmacotherapy, 950–953
 - physical therapy, 953–957, 954t
 - retrodiskal tissue, 936
 - stress reduction, 957–958
 - synovial tumors, 945
 - synovium, 934–935
 - vascular supply, 937
 - Wilkes staging classification, 967t
 - Temporomandibular (lateral) ligaments, 936
 - TENS
 - for TMJ, 956
 - Tension pneumothorax, 332, 334, 335f
 - Tension-stress
 - bone, 164
 - Tentative diagnosis, 564
 - Tent pole bone screws, 224f
 - Teratogens, 1067f
 - Terminal ballistics, 510
 - Terminally ill
 - avoidance of, 652–653
 - Tessier no. 7 left facial cleft, 855f

- Tetanus-prone wounds, 357
 Tetanus prophylaxis, 385t
 Tetracycline, 168
 for alveolar osteitis, 151
 avoidance in liver disease, 35
 Tetraplegia, 350
 TGF, 225, 785
 Theophylline
 for asthma, 29, 56
 reduction in liver disease, 35
 TheraBite Jaw Motion Rehabilitation System, 955, 955f
 Therapeutic neck dissection
 oral cancer, 651
 Thermal agents
 for TMJ, 956
 Thermal injury
 lip cancer, 659
 Thermal test, 386
 Thiamylal
 chemical structure of, 90f
 Thiazolidinediones
 mechanism of action, 60t
 Thiopental
 chemical structure of, 90f
 pharmacology of, 90–91
 Thiouracil, 691
 Thioxanthenes
 for psychotic disorders, 39
 Third Molar Project, 150
 Third molars
 antibiotics, 148
 failure to erupt, 140
 impacted
 removal contraindications, 152
 removal of, 149
 mandibular
 development of, 139–140
 impacted, 131
 partial eruption, 140
 in path of second molars eruption, 135, 135f
 removal of
 root fracture, 151
 retarded maturation of, 140
 surgery
 periodontal healing after, 152–153
 Thoma technique, 422f
 Thoracic vascular injury
 chest radiographs, 349f
 Threaded cobalt-chrome-molybdenum screw, 189
 Thrombin, 340
 Thrombocytes, 4
 Thromboembolism, 38
 Thrombophlebitis
 obesity, 40
 Through-and-through drain
 submandibular space, 286f
 Thyroid
 assessment, 61–62
 assessment of, 74
 disorders, 33–34
 orbitopathy, 1327f
 Thyroxine (T3), 33
 TIA, 37, 78–79
 Tiagibine
 for seizure disorders, 37
 Ti-6Al-4V, 189
 Tibial bone grafts, 791–792, 792f
 Tip
 support, 1350t
 rhinoplasty, 1353
 Tissue
 oxygenation
 evaluation of, 337
 smoking effect on, 10
 perfusion, 10
 evaluation of, 337
 shaver, 309f
 trauma
 minimizing, 9
 Titanium, 439–440
 mesh, 441f, 485, 500, 500f
 microscrews, 500
 plasma-sprayed surface, 190f
 reconstruction plate
 mandible, 796f
 screws, 1439f
 Titanium alloy (Ti-6Al-4V), 189
 TMJ. *See* Temporomandibular joint (TMJ)
 Tobacco. *See* Cigarette smoking
 Tobramycin, 944
 Toluidine blue, 626–627
 Tongue
 cancer, 622–623, 622f
 children, 103
 edema, 516f
 flaps, 662, 775–776, 777f
 leukoplakia, 632f
 magnetic resonance imaging, 643f
 radial forearm flap, 643f
 squamous cell carcinoma, 643–644, 644f
 traction of, 624f
 Tongue-retaining device (TRD)
 OSA, 1303
 Tonometry, 468
 Tonsils
 children, 103
 surgical specimen of, 1306f
 Topical 5-FU, 708
 Topiramate
 for seizure disorders, 37
 Tori, 612–613
 mandibular, 172f
 Torus mandibularis, 613
 Torus palatinus, 612, 612f, 613f
 Total alveolar osteotomy, 1166–1168, 1167f
 Total maxillary alveolar osteotomy, 1193
 midline palatal incision, 1191f
 vertical incision, 1191f
 Total pulp necrosis, 386
 Toxic epidermal necrolysis, 693, 694
 Trachea
 children, 103, 104
 injuries
 signs of, 518
 Tracheostomy, 516
 OSA, 1304–1305
 Tracheotomy, 281
 Track Plus System, 184
 Traffic accidents, 530
 Transantral osteotomy, 1197f
 Transblepharoplasty, 1401
 Transcolumellar incision
 rhinoplasty, 1355
 Transconjunctival incision, 455f, 482, 483, 551
 Transconjunctival upper lid blepharoplasty, 1334
 Transcutaneous nerve stimulation (TENS)
 for TMJ, 956
 Transforming growth factor (TGF), 225, 785
 Transfusion
 oral cancer, 635
 Transient ischemic attacks (TIA), 37, 78–79
 Transmucosal sedation, 109
 Transnasal wiring, 501–502
 Transosseous circum-mandibular wiring, 421, 424f
 Transpalpebral procedure, 1401
 Transplantation, 136
 Transport diagnosis, 1288f
 Transport distraction osteogenesis, 1286–1289, 1289f
 neocondyle, 1289–1290
 Transpositional flaps, 178f, 714, 773–774
 Transverse characteristics, 1103–1104, 1107f
 Transverse compensations, 1107
 Transverse facial proportion, 1096–1098
 Transverse orthopedic treatment, 1071–1072
 Transverse smile, 1104f
 Trapezium myocutaneous flaps, 779–780
 Trauma patient
 airway maintenance, 330
 breathing, 332–337
 cervical spine, 330

- circulation, 337–344
- initial management of, 327–354
- injury severity assessment, 327–330
- neurologic examination of, 344–345
- primary survey, 330–344, 344f
- secondary assessment of, 344–345
- stabilization of, 349f
- triage decision scheme, 328f
- Trauma Score, 328
- Traumatic avulsion
 - premaxillary segment, 1287f
- Traumatic bone cyst, 609, 610f
- Traumatic hyphema
 - zygomatic arch fractures, 459
- Traumatic loop deformity, 776f
- Traumatic neuroma, 611
- Traumatic optic neuropathy
 - zygomatic arch fractures, 459
- Trauner, 1150
- TRD
 - OSA, 1303
- Treacher Collins, 74, 104
- Treponema pallidum*, 681
- Triage decision scheme
 - trauma patient, 328f
- Triamcinolone acetoneide, 475
- Triazolam
 - pharmacology of, 87
- Tricalcium phosphate, 168
- Trichloroacetic acid (TCA), 1341
 - peels, 1427t
- Trichophytic forehead lift, 1395–1396
- Tricyclic antidepressants
 - for affective disorders, 38–39
 - for TMJ, 952–953
- Trigeminal nerve, 1325
 - anatomy and physiology, 822–824, 822f
 - fibers, 823t
 - injuries, 821
 - demographics, 819–820
 - third division of, 1139–1140
- Trigger points
 - for TMJ, 957
- Trigonocephaly, 890f, 896f
- Triiodothyronine (T4), 33
- Trimethadione, 691
- Trimethaphan camsylate
 - for hypertensive crisis, 50t
- Trimethoprim
 - for COPD, 30
- Trimethoprim/sulfamethoxazole
 - for rhinosinusitis, 305, 502
 - for sinus infection, 305
- Triple endoscopy, 624
- Trismus (stiffness), 281
 - with impacted teeth removal, 150
 - with osteomyelitis, 314
 - zygomatic arch fractures, 459–460
- Trocars
 - rhytidectomy, 1368f
 - TMJ arthroscopy, 970, 971f
- Trochlea, 464
- T-shaped incision, 996
- Tuberculectomy
 - lateral, 1003f
- Tuberosity reduction, 169, 170f
- Tube shift method, 133
- Tumescent solution, 1410t
- Tumescent technique, 1368f
 - Klein's, 1409
- Turbinate pneumatization, 298
- Turbinectomy
 - rhinoplasty, 1358
- Turner syndrome, 1066
- Twist drill, 242f
- Two-flap palatoplasty, 874f
 - Bardach, 852
- Two-implant bar
 - clip overdenture retention, 194f
- Two-point fixation
 - one-point fixation, 377
- Two-staged titanium implants, 189
- U
- Ulcerated lesions, 685–686
- Ulcers, 565
- Ultrasonography, 569
 - abdominal injuries, 352–353, 354t
 - cervical lymph nodes, 647
 - oral cancer, 625–626
 - TMJ, 956
- Ultraviolet damage, 1420
- Umbrella graft, 1361f
- Uncinate
 - anatomy and physiology of, 297
- Unconjugated bilirubin, 77
- Unerrupted teeth
 - vs. impacted teeth, 140
 - localizing, 133
- University of Maryland
 - shock trauma center, 527
- Upper blepharoplasty incision, 482–483
- Upper eyelid
 - crease, 1328
 - crease incision, 551
- Upper eyelids
 - blepharoplasty, 1331–1334
 - complications, 1339–1340
 - fat removal, 1339
 - high lid crease, 1339
 - lid crease asymmetry, 1339
 - preoperative concerns, 1331–1333
 - skin excision, 1339
 - examination of, 1328
 - fat pads, 1324
 - laxity, 1394f
 - transcutaneous blepharoplasty, 1333f
- Upper lips
 - augmentation, 1443f
 - changes with orthodontic incisor
 - retraction, 1223–1224
 - developing, 660f
- Upper respiratory infection
 - children, 106–107
- UPPP, 1305f
 - OSA, 1305–1306
- Urethral meatus
 - blood at, 343f, 353
- Urinalysis, 353
- Urinary tract disease, 30
- Urine
 - output in children, 42t
- Uvula
 - surgical specimen of, 1306f
- Uvulopalatopharyngoplasty (UPPP), 1305f
 - OSA, 1305–1306
- V
- Vagus nerve, 1451
- Valacyclovir, 688
- Valdecocix
 - for rheumatoid arthritis, 36
- Valvular heart disease, 23–24, 68
 - mitral regurgitation, 24
 - mitral stenosis, 23–24
- Vancomycin
 - for odontogenic infection, 289
- Van Graefe, Carl Ferdinand, 435
- Varicella-zoster virus, 686, 687–688
- Varix, 684–685
- Vascular compromise
 - management of tissue after, 1253–1254
- Vascularity
 - loss of, 1249–1250
- Vascularized fibular graft to mandible
 - implants, 268f
- Vascularized interpositional periosteal
 - connective tissue flap (VIP-CT),
 - 217–220, 217f, 218f, 220f
 - surgical technique, 217–218
- Vascular lesions, 684–685
- Vascular malformation
 - high-flow, 606f, 607f
- Vasopressin
 - for arrhythmias, 52

- Vector control devices, 1292f
 Vecuronium
 properties, 99t
 Velopharyngeal insufficiency (VPI), 845
 Velopharyngeal mechanism
 anatomy of, 876f
 muscle groups contributing to, 876t
 Velopharyngeal port
 catheter passed through, 1272f
 Ventilation, 59
 children, 103
 Ventricular ectopy
 benign, 52
 Ventricular fibrillation, 52
 Ventricular tachycardia, 27
 Verapamil
 reduction in liver disease, 35
 Vermilionectomy, 641, 641f, 662
 Verrucous carcinoma, 631
 buccal mucosa, 631f
 Vertical alveolar augmentation
 bone grafts, 223–234
 alveolar distraction osteogenesis, 230–231
 guided, 223
 iliac corticocancellous, 231–232
 interpositional, 230
 mandibular block autografts, 223–224
 sinus, 232–234
 symphysis block graft harvest, 225
 ramus buccal shelf block graft harvest, 225–230
 Vertical augmentation or reduction
 genioplasty
 soft tissue changes associated with, 1233t
 Vertical dystopia, 468
 Vertical facial proportions, 1093–1096
 Vertical impaction, 143
 bone removal, 146
 removal of, 148f
 Vertical incision, 996–997
 total maxillary alveolar osteotomy, 1191f
 Vertical orthopedic treatment, 1077–1079
 Vertical ramus
 osteotomies, 1141–1142
 sagittal osteotomy
 mandibular range of motion, 1159–1160
 Vertical rhytids
 glabella, 1398
 Vertical subcondylar osteotomy (VSO),
 1142–1146, 1142f, 1143f, 1144f
 complications of, 1145–1146
 indications for, 1142
 techniques for, 1142–1145
 Vesicular lesions, 685–686
 Vesiculoulcerative disease
 idiopathic, 691–692
 Vestibular incisions, 1185, 1186f
 atrophic mandible, 196
 Vestibuloplasty
 lasers, 175
 ViaSpan, 393, 393f
 Video monitoring cart
 TMJ
 arthroscopy, 969f
 Video monitoring equipment
 TMJ
 arthroscopy, 968
 VIP-CT. *See* Vascularized interpositional
 periosteal connective tissue flap
 (VIP-CT)
 Viral infection, 686–687
 Viscerocranium
 formation of, 1055
 Vision
 craniofacial dysostosis syndrome, 902
 loss
 lower eyelid blepharoplasty, 1341
 upper eyelid blepharoplasty, 1340
 Visor osteotomy, 183f
 Visual acuity, 468, 1330
 Visual analog scale, 826f
 Visual field evaluation, 1330–1331
 Visual fields, 468
 TMJ
 arthroscopy, 969–970
 Visual impairment, 472–474, 887
 Vital signs, 404
 Vitamin A
 effect on wound healing, 12
 Vitamin B
 effect on wound healing, 12
 Vitamin C
 effect on wound healing, 12
 Vitamin E, 641
 Vitreous hemorrhage, 473
 Volkmann's contracture, 475, 477
 Von Eiselberg's step osteotomy, 1138f
 Von Graefe, Ferdinand, 1317
 Von Langenbeck procedure, 874, 874f
 Von Willebrand's factor, 78
 VPI, 845
 Vs. unerupted teeth, 140
 VSO. *See* Vertical subcondylar osteotomy (VSO)
 V-Y closure, 1235–1236, 1236f, 1240f, 1442f
 alar cinch with, 1236–1237
 double, 1239–1241, 1242f
 V-Y flap, 772
 W
 Wadcutters, 514
 Wallerian degeneration, 828
 Warthin's tumors
 salivary gland, 671–672
 Watanabe, Masaki, 963
 Water's radiographs
 maxillary fractures, 438f
 maxillary sinus, 470f
 maxilla sinus, 470f
 zygomatic complex fractures, 448
 Wedge excision, 641
 Weight loss
 for OSA, 1302
 Weir's excision, 1363f
 Well-differentiated squamous cell carcinoma
 lip, 660–661
 Wenckebach, 28
 Wharton's duct
 calcified sialolith, 675f
 White blood cell count
 odontogenic infection, 283
 Whitenall's ligament, 1322, 1322f
 Whitenall's tubercle, 446, 465, 466
 Whitlow
 herpetic, 687, 687f
 Wickham's striae, 692
 Wide-eyed look, 466
 Wilkes staging classification, 942t
 IJD, 967t
 Wire brush, 1430
 Wiring techniques, 424f
 Witch's chin, 1242, 1243f
 Wolff-Parkinson-White syndrome, 51, 52f
 Wood's lamp, 470
 Working diagnosis, 564
 Wound care
 advances in, 12–14
 Wound debridement, 10
 Wound dehiscence, 9
 upper eyelid blepharoplasty, 1339
 Wound healing, 3–24
 age, 12
 bone, 6–7
 complications of, 8–9
 dermal substitutes, 13–14
 extraction wounds, 7–8
 gene therapy, 13
 hyperbaric oxygen therapy, 11–12
 inflammatory phase, 4–5, 193
 maturation phase, 193
 mucosal substitutes, 13–14
 nerves, 6
 nutrition, 12
 optimizing, 9–12
 osseointegration, 192–193
 phases of, 193

- process, 3
- proliferative phase, 5, 5f, 193
- proliferative scarring, 9
- remodeling phase, 5–6
- response, 3–6
- skin grafts, 8
- specialized, 6–8
- stages of, 361f
- Wound hypoxia, 9
- Woven bone, 193

- X
- Xenograft, 168
- Xeroderma pigmentosa, 698
- Xerostomia, 638

- Y
- Yaw, 514
- Young's syndrome, 302
- Youthful brow, 1384f
- Youthful forehead, 1384
- Yperman, Jehan, 840

- Z
- Zinc
 - effect on wound healing, 12
- Zinc oxide-eugenol cement, 388
- Ziprasidone
 - for psychotic disorders, 39
- Zone of fixation, 1391
- Z-plasty incision, 772
- Z-plasty technique
 - for frenum attachment excision, 173
- Z-shaped osteotomy, 1192f, 1193f
- Zygoma
 - anatomy of, 437f
- Zygoma fixture placement, 243f, 437
- Zygoma implants, 235–248, 238f, 242f, 270f
 - abutment platform, 243
 - abutments, 245f
 - armamentarium, 242f
 - border molding, 245f
 - buccal index, 247f
 - cast framework, 247f
 - casting technique, 247f
 - clinical assessment, 240
 - complications of, 239–240
 - contraindications for, 238–239
 - final impressions, 246f
 - fixtures, 198, 235f
 - fully inserted, 244f
 - hybrid denture tooth processing, 248f
 - immediate loading, 240f
 - impression coping, 241f
 - indications for, 236–238
 - acquired and congenital defects, 237–238
 - atrophy, 236
 - immediate loading, 238
 - inadequate posterior support, 236
 - partial edentulism, 238
 - syndromes, 236–237
 - master cast, 246f
 - milled bar structure, 247f
 - milling process, 248f
 - mounted casts, 246f
 - panoramic radiograph, 244f
 - presurgical assessment, 240
 - porcelain-fused-to-metal fixed partial denture, 248f
 - procera technology, 247f, 248f
 - procera titanium framework, 248f
 - prosthetic procedure, 244–248
 - final construction, 245–246
 - healing phase, 244
 - protective splinting, 244–245
 - protective splint, 246f
 - radiographic assessment, 240, 245f
 - record bases, 246f
 - screw access holes, 247f
 - sinus slot technique, 243f
 - soft tissue conditioning material, 246f
 - stage II surgery, 245f
 - surgical cast, 246f
 - surgical protocol, 242–243
 - waxed teeth, 247f
- Zygoma retractor, 242, 243f
- Zygomatic arch, 445
 - coronal section, 992f
 - fractures
 - incidence, 488
 - internal fixation, 455–456
 - orbital floor, 456–457
 - orbital fractures with, 477
 - reduction of, 451f
 - surgery, 457–460
 - treatment, 450–451
 - internal fixation of, 456
 - surgical approach to, 455
- Zygomatic buttress, 548
- Zygomatic complex
 - displaced
 - elderly, 486f–487f
 - fractures, 445–460, 446f, 447f, 448f, 467
 - children, 534–537
 - classification of, 448–449
 - computed tomography, 454f
 - diagnosis, 447–448
 - high-energy, 451–455
 - history, 447
 - low-energy, 451
 - middle-energy, 451
 - physical examination, 447
 - radiographic evaluation, 447–448
 - surgical anatomy, 445–446
 - treatment, 449–457, 451–456
 - without need for internal orbit reconstruction, 452f
- Zygomatic nerve, 1326
- Zygomaticofrontal buttress, 451
 - internal fixation of, 456
 - surgery, 452–453
- Zygomaticofrontal suture
 - palpation of, 447
- Zygomaticomaxillary buttress
 - fracture
 - fixation, 453f
 - subciliary incision, 453f
 - supratarsal fold incision, 453f
 - internal fixation of, 456
 - surgery, 452
- Zygomatic osteotomy, 1200–1201
- Zygomatic retractor, 242f
- Zygomaticus major, 445